Incentives, Virtues and Big Data Organisations

By

Yael Nicole Dall

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Supervisor: Prof JP Hattingh

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Declaration

By submitting this thesis electronically, I declare that the entirety of the work contained herein is my own original work, that I am the authorship owner thereof (unless to the extent explicitly otherwise stated), and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

Yael Dall

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Abstract

The nature of organisations has transformed greatly over recent years and contemporary organisations now have even greater responsibilities with the introduction of Big Data analytics. As a result, ethical concerns regarding the use of Big Data have emerged. One of these concerns, among many, is new ways in which employees can behave unethically in Big Data organisations. For example, with the introduction of new surveillance tools and data gathering techniques that provide detailed information about people, this creates an increased risk of employees finding ways to manipulate consumers' attention in order to influence their behaviour. This is often done by personalising customer profiling in an attempt to improve services offered by the organisation or to increase sales, in order to increase profit. This can result in unintended consequences, such as discrimination or violating privacy rights. The right to privacy is a fundamental human right and, as such, organisations, and its employees, should be committed to respecting it.

This study evaluates what organisational tools can be used to promote ethical (or virtuous) behaviour in Big Data organisations, focusing on incentives. A literature review conducted on organisational incentives shows that people do what they are incentivised to do, therefore aligning rewards with ethical outcomes is a possible solution to ethical problems in Big Data organisations. Organisations already incentivise employees simply for doing what is expected of them, therefore, it makes sense that organisations ought to incentivise ethical behaviour of employees if ethical (or virtuous) behaviour is what they want to encourage.

Incentives should not only be understood in terms of driving behaviour to achieve an outcome but also in terms of *how* these outcomes are achieved. The study thus provides an opportunity to evaluate if a moral theory, such as Virtue ethics, integrated into an incentive system, could provide a good framework as to *how* employees should conduct themselves in Big Data organisations. This study will explore a potential solution for motivating virtuous employees in Big Data organisations who can make responsible decisions founded on their strong character traits. The potential risks of incentivising ethical behaviour are also explored.

The findings suggest that including an ethics measure in existing incentives in Big Data organisations can have a positive effect on ethical behaviour, and therefore virtuous behaviour should be incentivised with appropriate incentives, such as nonfinancial incentives, by rewarding virtuous employees, and appropriately coaching or disciplining unethical employees.

Opsomming

Die aard van organisasies het die afgelope jare baie verander maar met die opkoms en analise van “Groot Data”, het hedendaagse organisasies nou 'n groter verantwoordelikheid as ooit. As gevolg hiervan, het kommer ontstaan oor die etiese gebruik van “Groot Data”. Een bekommernis onder meer, is die nuwe maniere waarop werknemers oneties kan optree. Byvoorbeeld, met die bekendstelling van nuwe toesiginstrumente en tegnieke vir die insameling van data wat gedetailleerde inligting oor verbruikers bied, skep dit 'n verhoogde risiko dat werknemers maniere kan vind om die fokus van die verbruiker te manipuleer en sodoende hulle gedrag te verander. Dit word dikwels gedoen deur die verbruikersprofilering te personaliseer in 'n poging om dienste wat die organisasie bied te verbeter of om verkope te verhoog en sodoende wins te verhoog. Dit kan onbedoelde gevolge hê, soos diskriminasie, of tipies die skending van die reg op privaatheid. Die reg op privaatheid is 'n fundamentele reg en organisasies en sy werknemers moet daartoe verbind wees om dit te respekteer.

Hierdie studie evalueer watter instrumente organisasies kan gebruik om etiese (of deugsame) gedrag in “Groot Data” organisasies te bevorder, maar met die fokus op aansporings. 'n Literatuuroorsig van organisatoriese aansporings toon dat mense se gedrag verander kan word in die rigting waarin hulle aangemoedig word, en daarom is beloning vir etiese uitkomste 'n moontlike oplossing. Organisasies moedig werknemers reeds aan om bloot te doen wat van hulle verwag word. Daarom is dit sinvol dat organisasies etiese gedrag van werknemers moet aanspoor as etiese (of deugsame) gedrag dit is wat hulle wil aanmoedig.

Aansporings moet nie net verstaan word in die konteks van bestuursgedrag om 'n uitkoms te bereik nie, maar ook in terme van *hoe* hierdie uitkomste bereik word. Die studie bied dus die geleentheid om te bepaal of 'n morele teorie, soos Deugde-etiek, 'n goeie raamwerk kan bied vir *hoe* werknemers, met die regte aansporingsteikens, eties kan optree. Hierdie studie sal 'n moontlike oplossing ondersoek vir die motivering van deugsame werknemers in hedendaagse “Groot Data” organisasies wat deugsame besluite kan neem gebaseer op hul sterk karaktereienskappe. Die potensiële risiko's van aansporing van etiese gedrag word ook ondersoek.

Die bevindinge dui daarop dat 'n etiese maatstaf wat by bestaande aansporings ingesluit word in “Groot Data” organisasies 'n positiewe uitwerking op etiese gedrag kan hê, en daarom kan deugsame gedrag aangespoor word met toepaslike aansporings. Nie-finansiële aansporings, byvoorbeeld, kan gebruik word om nie net deugsame werknemers te beloon nie, maar ook om die nodige afrigting aan of dissiplinering van onetiese werknemers te verskaf.

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Chapter 1

Introduction

1.1 Setting the context

The twenty-first century has been characterised by multiple economic scandals and corporate downfalls across the globe, which has raised the profile of ethics as a critical focus for institutions, and has resulted in many people questioning the existence of responsible ethical decision-making capabilities within institutions. The consequences of these scandals highlight the damaging effects caused by unethical behaviour, and highlights a critical need to determine what drives responsible ethical decision-making skills in organisations. Ethical behaviour refers to what is considered good or right in human interaction (Crane and Matten, 2016). Unethical behaviour has progressed in recent times in the business world from unethical individuals to unethical organisations. Think Enron, VW, Arthur Andersen, Lehman Brothers, Bernie Madoff and AIG. In South Africa (SA), examples include Steinhoff, KPMG, VBS and McKinsey. The origin of these scandals can be attributed to factors such as unethical leaders and greed, but can also be accredited to poor management practices employed by organisations. Furthermore, they can also be attributed to the broader ethical challenges facing SA. Both the public and private sectors have been branded with corruption and greed perpetuating an unethical culture in SA, leading to societal ethical challenges (Woermann, 2012).

The suggestion that organisations struggle to adequately respond to the problems of unethical behaviour is evident from the "evolution" of such behaviour, specifically since the 1990s in the business world. Previously, unethical behaviour was more likely to be caused by a rogue individual, for example, engaged in embezzlement. It progressed to unethical behaviour occurring in organisations by groups of employees, and then across multiple organisations, which then lead into the more recent systemic failures (Toms, 2019).[1] We now see the behaviour of individuals who may not even be aware of the potential consequences of their actions within the context of Big Data analytics, and therefore unintentional organisational malfeasance has become more likely. Where unethical decisions were previously made by individuals who chose to lie to cover up their mistake, or commit misconduct in their work, this progressed to groups of individuals collaborating to behave unethically, resulting in

[1] Financial scandals: a historical overview by Toms (2019) in Accounting and Business Research provides further insight into the evolution of financial scandals.

organisational failures. An example of a rogue individual is Nick Leeson, a former UK broker, who is famous for bringing down Barings Bank into bankruptcy, for which he was imprisoned. The infamous story of the collapse of Enron is an example of an organisational failure where multiple executives were the cause of the collapse due to illegal and unethical behaviour. They created a culture where actions were taken to win at all costs. This collapse was one of many factors that lead to the financial collapse of 2008 where systemic failures caused dire consequences.[2] We now find ourselves in a situation where preconditions of civil society are being eroded as a result of Big Data analytics and the inability to adequately control and monitor the responsible collection and usage of data and protect individual's rights to autonomy and privacy. Some of the warning signs we should be taking cognisance of are events such as the Cambridge Analytica and Facebook debacle[3] in 2016 where people's freedom of decision-making was manipulated, without their knowledge, resulting in an impact on nation-wide voting rights. Is the personalising of Big Data analytics to manipulate individual's attention possibly the next big accident waiting to happen?

Big Data analytics describes the use of analysing big datasets of information to provide valuable insights. Big Data links knowledge from many sources in new methods to produce new information, in order to make better predictions and to create personalised benefits (Martin, 2015). Big Data organisations are like any other organisation, but use Big Data analytics to produce new information in order to identify trends and patterns, in order to personalise products and services, to create a competitive advantage. The nature of organisations, however, has transformed greatly over recent years and contemporary organisations now have even greater responsibilities with the introduction of Big Data analytics, and therefore more opportunities for unethical behaviour emerging. As technology has advanced, the ethical challenges of Big Data analytics have increased and raised questions that organisations have never faced before. Questions such as, "is it ethical to electronically monitor employees in the workplace in order to improve productivity?" And "is it ethical to collect personal details from social media to target individuals in order to sell products they haven't shown an interest in?" The ethical landscape of how organisations operate has changed significantly in the digital era and this raises the question whether the conventional organisational tools can still be used to promote ethical behaviour in this new landscape. Floridi (2015) argues that technology affects our self-conception, our mutual interaction, our conception of reality, and our interactions with reality. He also argues that

[2] The Financial Crisis Inquiry Commission created by the United States Congress to investigate the causes of the financial crisis of 2007–2010 https://www.govinfo.gov/content/pkg/GPO-FCIC/pdf/GPO-FCIC.pdf

[3] Cambridge Analytica-Facebook debacle: https://www.washingtonpost.com/news/politics/wp/2018/03/19/everything-you-need-to-know-about-the-cambridge-analytica-facebook-debacle/

technology changes our conventional understanding of moral responsibility (Floridi, 2015), thus resulting in a further complex ethical landscape. If our current reality is changing, and more concerning, if the concept of moral responsibility is transforming, then we cannot continue operating organisations in the same way as we have done in the past. In light of this new setting, the conventional organisational tools used to promote ethical behaviour should be re-evaluated. The digital era calls for more than the traditional rules and codes that are commonly used to drive ethical behaviour in the workplace – and in society. Incentives are one example of a conventional tool that organisations have used to influence behaviour for many decades. Grant (2002) defines an incentive as: "An offer of something of value, sometimes with a cash equivalent and sometimes not, meant to influence the payoff structure of a utility calculation so as to alter a person's course of action. In other words, the person offering the incentive means to make one choice more attractive to the person responding to the incentive than any other alternative" (Grant, 2002: 111). The question then arises whether these same traditional incentives can be used in the new ethical climate we find ourselves in? The famous injunction attributed to Albert Einstein, "The problems that exist in the world today cannot be solved by the level of thinking that created them" (Prensky, 2009) reminds us that we need to apply new thinking to the challenges created by the thinking that created the innovation of Big Data analytics. We need to rethink our current methods and modify them, or design new methods for these new ethical challenges, and these should be designed with our future in mind too.

A critical ethical challenge emerging from Big Data analytics is the right to privacy and the protection of personal data. This concern is globally debated and publicised, however it appears that some organisations are not fully committed to the protection of personal data collected and have not instituted appropriate practices regarding the use of Big Data analytics. Consumers are also often ignorant to the associated risks and potential consequences of Big Data analytics. Regulations to support the fight against data misuse have become critical and good corporate governance means having principles such as transparency and accountability (Primbs and Wang, 2016). There is the European Union's implemented privacy legislation titled "General Data Protection Regulation", known as the GDPR. Legislated in 2018, the GDPR was designed to protect citizens' privacy, to create rights for citizens regarding awareness of data that is collected on them and how this data is used and shared, as well as the right for citizens to correct or delete this data. In 2019, the European Commission to the European Parliament assessed the effects of the implemented regulations and concluded that the application of the GDPR should be considered successful in many ways as many objectives set by the European legislators have been achieved (Dellei, 2019). However, the Commission pointed out there

are still aspects of the GDPR that need further attention.[4] The evidence of the amount of fines imposed reveal that large scale data breaches are still occurring and are a real threat to individuals' privacy, and that legislation is not sufficient to prevent this from occurring. This reveals that further initiatives are required in order to support this legislation to institute appropriate practices regarding the governance of Big Data analytics.

This new ethical landscape combines contemporary organisations and technologically-enabled opportunities for unethical behaviour, with ambiguity in regard to agency and accountability. The focus here is on making profit at all costs and human manipulation for profit. Based on this new ethical landscape, Big Data organisations and their employees should examine what they can do differently to operate ethically in this new climate to instil trust in their organisations from their customers, suppliers, employees, and society as a whole. In an effort to support this goal, the aim of this chapter is to introduce three key concepts, namely: incentives, ethical (virtuous) behaviour and Big Data organisations, which are central to this study, in order to better understand the ethical landscape society and business finds itself in.

1.2 Outlining incentives

It has been reported that American organisations spend almost twenty-seven billion Dollars on nonfinancial rewards, such as merchandise, holidays, and recognition gifts; and when financial rewards are added, the figure is approximately almost 117 billion Dollars annually (Stolovitch, Clark and Condly, 2002). Yet, with approximately a hundred years of research conducted on incentives, conflicting views regarding their value still exist. Stolovitch, Clark and Condly (2002) conducted research with the aim to create accurate conclusions regarding the use of incentives in the workplace. They evaluated trends and information from more than forty-five studies, input from online questionnaires and telephonic interviews from 145 American organisations that use incentives. Their findings revealed that well-managed incentives can greatly increase work performance by an average of 22% and incentives can greatly increase individuals intrinsic interest in work tasks, and do not create conflict, or undermine, the intrinsic goods of work practices or internally driven motivation, as previously understood. This significant finding will be discussed in the review of incentive literature in Chapter 2. According to Lazear (2018), remuneration has great effects on employee motivation, and the theory of incentives provided decades ago has been refined in recent years and still continues to gain support. According to Gneezy, Meier and Rey-Biel (2011),

[4] A Year in the Life of the GDPR: Must-Know Stats and Takeaways: https://www.varonis.com/blog/gdpr-effect-review/

incentives are still attractive to employers as they aid in building new habits, and aid in breaking undesirable habits. The reality is that incentives play a critical role in economic and organisational behaviour; the financial crisis is evidence of this.

Big Data organisations already use incentives in their business models to improve employee productivity and to optimise their service offerings and profit. However, there does not appear to be many examples available of Big Data organisations using incentives to promote ethical behaviour among their employees. Just as these organisations implement incentives to improve performance-related behaviours in order to make profit, they could potentially implement incentives to influence ethical behaviour, in order to build better ethical habits. Big Data organisations could also consider integrating this mechanism with other habit building mechanisms, such as Virtue ethics, to promote ethical behaviour. This moral theory aims to promote sound character traits, which are practiced and become habitual. In order to consider this mechanism, Big Data organisations would need to better understand what virtuous behaviour entails.

1.3 Outlining ethical conduct

Ethical conduct refers to behaviours that are linked to moral principles and norms, which are required in order for society to function harmoniously. Ethics applies in the workplace just as it applies in all areas of life. Understanding the desired ethical conduct in an organisation can assist in identifying unethical conduct, and this can lead to finding methods to prevent or reduce these incidents. Ethical decision-making, also known as moral reasoning, has been a topic of debate since ancient times and is still debated today. Over centuries, philosophers have theorised different ways to support ethical decision-making in order to guide ethical conduct. According to De George (2005), the topic of ethics in business has been researched by many philosophers and economists, from Aristotle (384–322 BC) and his concept of justice, to Karl Marx's (1818–1883) attack on capitalism, arguing that most benefits were only reaped by few. Modern Business Ethics dates back to the 1970s, prompted by a series of corporate scandals involving bribery by American organisations (De George, 2005). It became an academic field in its own right, with both philosophical and empirical fields (De George, 2005). Ethics has since been integrated into business operations, reflected today in functions such as Corporate Social Responsibility (CSR) strategies and into codes of conduct and policies. Fully aligned ethically-mature organisations have embedded ethics into their strategies and culture. Business Ethics is also an established academic field (De George, 2005), and studies include normative ethical approaches.

These ethical approaches are theories which provide principles that determine right and wrong in specific business settings (Crane and Matten, 2016). These theories can guide organisations in determining which standards of behaviour should be considered as ethical conduct, and provides important information in order to manage ethical conduct and reach responsible ethical decisions. Although most employees know the difference between right and wrong behaviour, when faced with ethical dilemmas, employees experience pressure to compromise ethical principles due to working in an environment which prioritises innovation and profit above all else, or they may feel forced to make choices they would not have usually made, or feel that it is unsafe to speak up due to fear of retaliation. Often, employees experience pressure to reach unrealistic goals and will make poor decisions in order to achieve these targets, thereby justifying it as a means to an end. With the introduction Big Data analytics, new and complex ethical challenges have emerged, where privacy can be breached when employees try to achieve targets by any means necessary. A strong ethical framework should thus be considered to embed ethical behaviour in Big Data organisations in order to mitigate these risks and to create a balanced view which considers the risks to all parties.

When reviewing normative ethical approaches, Virtue ethics appears to be a well-suited approach for use in Big Data organisations. Virtue ethics focuses inwards to the character of the individual and these traits provide guidance as to how individuals ought to behave. There has been a recent realisation that an ethics of character will work better in Big Data organisations than a rule or duty ethics which needs to be constantly enforced and policed. This is evidenced by the numerous calls for a return to virtuous behaviour by experts. At first-glance a move to Virtue ethics appears to be in contradiction to the trend of using incentives, which as mentioned above, organisations are still showing an interest in using. This creates a complexity as these two mechanisms appear to conflict due to their source of motivation. Virtues are associated with intrinsic motivations, whereas incentives are associated with extrinsic motivations. However, could it be possible to apply both forms of motivation to strengthen employees ethical conduct by creating motivation intrinsically and reinforcing it extrinsically? My contention is that we should rethink the role traditional incentives play in organisations, and revise the types of incentives used to promote the ethical behaviour that is required in Big Data organisations.

1.4 Outlining Big Data

New ethical dilemmas are emerging in today's fast-paced technological advancement era. Globally we are undergoing what is known as the Fourth Industrial Revolution, demonstrated by the removal of limitations between the physical and the digital worlds, and the outsourcing

of decisions to machines, all fuelled by data (O'Neil, 2019). Big Data analytics has become a competitive advantage and organisations have become reliant on using data-driven algorithms to shape choices and make decisions on behalf of people; however, this also poses great ethical risks. Threats of breaching clients' privacy and the growing awareness around manipulation of people's attention through technology and data have resulted in heated debates regarding the need for better transparency, accountability and inclusiveness, due to potential harmful outcomes of unethical data use (O'Neil, 2019).

Many authors have written about the new reality we find ourselves in due to the effects of Big Data analytics, and the ethical risks they present. Martin (2015) believes that the Big Data industry is at a critical tipping point where business leaders that have intimate knowledge of the systemic risks, as well as the necessary power, could create meaningful change. Big Data has been seen as a breach of privacy, and a distortion of the power relationship (Martin, 2015). Martin (2015) argues that in generating complex data sets and using new predictions, Big Data organisations have breached trust by activities such as targeting individuals to purchase certain products, and by informing friends and family that someone they know is pregnant or engaged. She acknowledges that Big Data has been successful in improving many factors, such as national security, marketing strategies, and medical research, but warns of the ethical risks associated that are still unfolding (Martin, 2015).

Floridi (2014) agrees that the "infosphere" is reshaping our reality and considers the influence that information and communication technologies (ICTs) are having on our world. Infosphere is a term he uses based on the concept of "biosphere", a term referring to the global ecological system integrating all living beings (Floridi, 2014). He explains that it represents "the whole informational environment comprised of all informational entities, their properties, interactions, processes, and mutual relations" (Floridi, 2014: 41). He argues that this is the environment we are creating for ourselves and for future generations (Floridi, 2014). He explains that the ethical risks brought about by ICTs are complicated and confusing because there is constant evolution (Floridi, 2014). ICTs have affected many aspects of our world, such as communication, education, and work, and has influenced our moral lives (Floridi, 2014). He uses examples to demonstrate that before the introduction of Big Data analytics we were living in an environment which included the protection of privacy and freedom of expression, yet now we have organisations such as Wikileaks[5] which allows the anonymous sharing of confidential information; and an environment where there was a digital divide between those

[5] Everything You Need to Know About Wikileaks. Wikileaks is a self-described "not-for-profit media organization", launched in 2006 for the purposes of disseminating original documents from anonymous sources and leakers https://www.technologyreview.com/2010/12/09/120156/everything-you-need-to-know-about-wikileaks/

who had access to technology and those who did not, and today we live in a “onlife” society, where we are always online and there is greater access to technology (Floridi, 2014). Although these advancements have created many benefits, they have created many ethical risks too, which are not fully understood or realised. This highlights the need for further conversations regarding these risks to find solutions. This raises the question of what mechanisms can be used to better govern, regulate, and motivate ethical behaviour in this new context.

Although policymakers have a responsibility to ensure that appropriate regulatory frameworks and data governance mechanisms are in place so that data collectors and users understand, respect, and can practice fundamental human rights, this does not appear to be enough as a stand-alone solution. SA is currently implementing “The Protection of Personal Information Act” of 2013 (known as POPIA) for these purposes, similar to the GDPR discussed above. The operative provisions of the POPI Act came into force on 1 July 2020 and organisations have 12 months to become compliant. Some of the requirements include: appointing data officers and clarifying their obligations, and determining individuals’ rights regarding direct marketing. Although legislation is a key requirement in regulating responsible behaviour with data analytics, it does not adequately address all the new ethical challenges that arise from Big Data analytics. Data analytics is here, but corresponding legal and ethical frameworks are lagging behind. An organisation should also go above and beyond what the law requires, the law is a minimum standard, and ethical organisations should do more than the bare minimum when it comes to responsible data management. Cameron (2011) argues that taking responsibility involves accountability and empowerment. He argues that responsibility also includes the concept of virtuousness as responsibility involves the pursuit of the ultimate best (Cameron, 2011). Along the same lines, Floridi (2014) argues that the ethics of information is similar to Virtue ethics in that “both treat the human being as an entity under construction, a work in progress in charge of itself” (Floridi, 2013: 77). He argues that Virtue ethics explains that “the well-being and flourishing of an informational entity, and what an informational entity should be and become, can be determined by the good qualities in that informational entity as a specific instance of being” (Floridi, 2013: 77). This research suggests that there is a need for virtuous employees in Big Data organisations, who have developed good habits, and who can make responsible decisions based on their strong character traits, and also take responsibility for the future that Big Data organisations are playing a part in building.

An incentive system could facilitate in reinforcing this virtuous behaviour. Discussions regarding incentivising ethical behaviour in Big Data organisations that are facing new ethical challenges has only just begun. We currently find ourselves in unknown and unprecedented territory in regards to managing ethical challenges created in this context.

1.5 Deepening the problem

It is clear from the discussion above that we are facing a new reality that could have severe consequences for our moral future. The technological conditioning that we face is changing the traditional ways of living and keeps us from recognising that when we use certain technologies we may be choosing to go along with these technologies' vision of "a life lived well" instead of our own authentic vision (Vallor, 2016). Big Data organisations contribute to spreading this lack of authenticity by supplying an endless volume of data that is processed and sold to advertisers, in order to make money. Social media platforms believe that they create notions of the ideal way of life, and make us believe there are products and services we must have, and that we need attention from other people in order to feel good. In the face of unchartered territory for contemporary organisations who are faced with Big Data challenges, it is critical to find methods to mitigate these new ethical risks created by the introduction of Big Data analytics. Big Data analytics has far reaching consequences on the ethical landscape of how organisations operate, which raises the question whether the conventional tools organisations make use of can still be used to promote ethical behaviour in this new landscape. If our current reality and interactions are changing, then we cannot continue operating organisations in the same way as we have done in the past. The conventional tools that organisations use to influence ethical behaviour should be re-evaluated in light of this. For example, using traditional rules and codes to drive ethical behaviour in the workplace is not sufficient for the digital era. Ethics codes set out the standard for acceptable behaviour, however may not address the new changes introduced by the Big Data era, and it is also challenging to keep ahead of the evolving changes. These codes may not provide guidance for the ethical decisions employees are not even aware they are making. Another example is incentives, which organisations have used to change behaviour for many decades. If the organisational setting is different, the tools we use may need to be different too. We need to rethink our methods in order to design tools equipped for the new Big Data organisation to manage the related ethical challenges created. In order to manage these ethical challenges, and create suitable tools to address them, it is necessary to understand what problems they create.

A key concern is the scale and ease with which Big Data analytics can be done today. The problem is that our ability to gain new knowledge from volumes of data is moving quicker than our current ethical guidelines can manage. We can do things that were impossible before, but the governance of this practice is not yet in place. Big Data analytics creates the opportunity to interpret large, and complex, sets of data that traditional data processing software could not analyse and interpret. For example, Big data analytics results in the ability to personalise marketing efforts and predict consumer shopping habits, at a scale that was previously not

available. This has also resulted in the irresponsible sharing of misinformation or “fake news”. This volume of information is often created from the trail we leave behind from searching online and using social media, scrolling through news feeds, liking pictures and posts, ultimately unaware of the personal data we have created for organisations to use in order to influence our choices, behaviour, and beliefs. The consequences of this result in information which is used to control our reality, as what we think we have autonomously decided has actually been directed by a series of technological influences. Our behaviour is modified, shaping it towards desired business-related outcomes – to make money. This removes our autonomy which is critical for maintaining a democratic society (Zuboff, 2019). Moral autonomy creates the capacity to be our own person, to live our life according to reasons and motives that are our own and not the product of external forces (Christman, 2020).

Tristan Harris, a design ethicist who previously worked for Google in 2011, explains this control of our reality by explaining that there are hidden psychological designs in technology that grab our attention and manipulate our choices. He explains that Big Data has created a race for attention in order for organisations to achieve certain outcomes, which have been monetised to gain financial success (Ferris and Harris, 2019). He argues that when we attached financial success directly to the capturing of human behaviour we started controlling and shaping human behaviour (Ferris and Harris, 2019), thereby changing the ethical landscape. He illustrates this by using an example in social media. He explains that in order to determine how to keep people engaged, social media services produced the “follow” button. Twitter and Instagram were the first services that did this where, instead of adding someone as a friend, which is the Facebook model, the “follow” model created a reason why people would receive a new email. Individuals would receive a new email stating “You’ve got two new followers”, then “You’ve got five new followers” and it continued. This intrigued people to check their mail often to see who had “followed” them, resulting in individuals becoming addicted to getting attention from other people (Ferris and Harris, 2019). This is the same model used by Marketing organisations seeking attention for their services and products, in order to make money. He explains that currently there is a monopoly on our attention between major technology companies, such as Facebook, Instagram, WhatsApp, Twitter, YouTube, and Snapchat (an even bigger domination was created when Facebook bought Instagram and Whatsapp). He argues that there is a fine line between the capturing of human behaviour and manipulation of human behaviour and the problem we face is that there is no alternative to reach the same level of audience, which is why we don’t see different business models emerging (Ferris and Harris, 2019). He argues that this creates an ethical challenge as this is incentivising mindless human behaviour, and there is no alternative business model to compete and change the playing field (Ferris and Harris, 2019). He advocates that human

attention should be treated as something sacred, and human agency is the differentiating factor where only informed effective choices can change this reality. He suggests that we need a mass delinking between business success and capturing the attention of humans, and this would be a huge and uncomfortable transition (Ferris and Harris, 2019).

Floridi (2015) further argues that this new technology and manipulation of behaviour is increasingly creating a problem that is affecting our conception of who we are, how we socialise, our conception of reality, and our agency. This creates new ways in which employees can behave unethically in organisations. Access to unlimited volumes of data and vast opportunities to manipulate this data to make money create trade-offs between innovation and the right to autonomy or privacy. He argues that the blurring of human and machine makes it easier to create new forms of automated technology which supports innovation and efficiencies, however creates a problem in determining moral accountability (Floridi, 2015). It is not clear who should be held accountable when harm is caused in the new digital era. Employees may not have autonomous decision-making opportunities and could be following decisions made by algorithms. Where moral responsibility for the effects brought about by technology is usually attributed to their designer or user, new technology challenges these assumptions by creating a need for distributed responsibility (Floridi, 2015). Employees working with data collection and usage are often not even aware of the effects of the decisions made based on data analytics, and often there are unintended consequences. Floridi (2014) stresses that the problem is that we are lacking a moral framework that can treat the infosphere as a new environment worth the moral attention and care of those inhabiting it.

When considering possible solutions for this alarming ethical dilemma society faces, incentives are at the forefront as our current reality shows that incentives drive behaviour. If incentives are successfully being used to manipulate behaviour for money-making purposes, can incentives be used to influence behaviour to also do good? The biggest challenge we face is our moral future in this uncertain technological world. It is becoming evident that another possible solution includes the inclusion of virtues in order to bring back a focus on our core moral behaviour. Shannon Vallor (2016) argues that Virtue ethics is the most promising practical resource for learning how to cope with, and even flourish in, our risky technosocial condition. She argues that the technological conditioning that we face keeps us from recognising that when we use certain technologies we may be choosing to go along with these technologies' vision of "a life lived well" instead of our own vision (Vallor, 2016).

On the surface it appears that these mechanisms of incentives and virtues are in conflict with one another due to their source of motivation. Virtues are associated with intrinsic motivations, whereas incentives are generally associated with extrinsic motivations, which creates a

situation where either they are in conflict, or they could work together. Perhaps together they could provide the necessary behaviours required by motivating individuals from within, and creating motivation from external forces from the organisation to reinforce this intrinsic behaviour. By recognising that employees are diverse and are motivated differently, considering both intrinsic and extrinsic motivators could be beneficial.

Based on the state of affairs described above, and in an effort to affect the trajectory organisations, and society, are headed, the question arises if a possible solution to this problem could be to implement an incentive system in Big Data organisations to promote and reinforce virtuous behaviour, and if so, how this incentive system would look and function.

1.6 Aim and approach

There is a considerable amount of literature available regarding how incentives influence behaviour, but less literature available regarding incentivising ethical behaviour, and even less literature available regarding incentivising ethical behaviour in Big Data organisations. This identifies a gap in the research regarding rewarding ethical conduct in this context. The value of exploring methods to reward ethical behaviour could be essential in the fight against data misuse. The purpose of this study is to evaluate if integrating incentives and Virtue ethics can improve ethical decision-making skills of employees in Big Data organisations. The approach of this research will be to firstly review the existing literature regarding the impact of organisational incentives to determine if incentives can be modified and applied in the Big Data context, to improve ethical decision-making skills. Secondly, this study will review the ethical challenges created by Big Data analytics, and review the Virtue ethics approach as a suitable approach for this context, in order to determine what type of organisation, and employee, is required in Big Data organisations. In determining the role incentives can play in promoting ethical conduct in organisations, Chapter 2 will be devoted to exploring four key research questions regarding: the impact of incentives on behaviour in organisations, the types of incentives that could be effective in promoting ethical conduct in Big Data organisations, the risks of implementing incentives, and the ethical implications of implementing incentives.

With a view to answering these research questions, I will make use of a theoretical framework in which psychology is used to explain how incentives work in Big Data organisations. Human behaviour is influenced by its consequences and psychology explores this connection between our minds and our behaviour, and explains how behaviour can be shaped by reinforcement and punishment, in order to reinforce the desired behaviour, as these are the

underlying mechanisms of incentive systems used to influence behaviour (Gneezy, Meier and Rey-Biel 2011). The role that behavioural psychology has played in explaining ways to influence human behaviour is reviewed, as well as recent explanations of human behaviour from cognitive psychology.[6]

In determining the role incentives and Virtue ethics can play in promoting virtuous behaviour in Big Data organisations, Chapter 3 will focus on another three research questions regarding: the features of Virtue ethics that distinguish it from other ethical approaches, the ethical challenges created by Big Data, and the integration of incentives and virtues in Big Data organisations. Implementing a Virtue ethics framework could provide the right motivation for doing the right thing at the right time, and an incentive system could reinforce this behaviour to create virtuous employees and embed the required behaviours in the organisation. Embedding ethics in an organisation's rewards system requires establishing a model to identify ethical behaviour, developing ethics performance metrics, measuring employees against these metrics and then rewarding ethical behaviour, and coaching or punishing unethical behaviour. Practicing virtues such as honesty, courage, and wisdom could help build an ethical culture needed for Big Data organisations, and providing recognition for these practices could reinforce these daily habits. The potential risks of incentivising ethical behaviour are also explored. A key risk explored is the delicate balancing act this incentive system may create where the organisation needs to consider the expectation of employees' virtuous behaviour in proportion to the ethical challenges posed by Big Data, and also ensure it does not impose a narrow, moralistic and even discriminatory restriction on employees.

Rethinking incentives to promote ethical behaviour in the Big Data context changes the conversation about ethics and incentives, not only by challenging it in new ways, but also in creating new opportunities for ethical responsibility and incentivising this. Murphy (2011) argues that with the growing distrust of organisations and the increasing levels of misconduct, it has become important for organisations to use incentives as a tool to drive the required behaviour of employees. He claims that by developing appropriate ethics incentives, management can demonstrate their commitment to ethical conduct, and can significantly reduce the risk of unethical conduct **(**Murphy, 2011).

[6] Cognitive psychology is the field of psychology that deals with mental processes, such as thoughts, memory and problem solving. It is a field that has built understanding of many automatic mental processes like how we pay attention, learn language, store and retrieve information from memory and what happens when we think of our own thoughts: https://www.sacap.edu.za/blog/applied-psychology/types-of-psychology/

This thesis proceeds with the following chapters:

- Chapter two aims to provide a comprehensive literature review of the research which has been conducted on organisational incentives. This chapter explores the concept of incentives and the impact of incentives on behaviour in organisations. The significant role that psychology plays in understanding how human behaviour is influenced by organisational incentives is examined. Four key research questions are explored concerning: the impact of incentives on behaviour, the types of incentives that could be effective in promoting ethical conduct in Big Data organisations, the risks of implementing incentives for ethical behaviour in Big Data organisations, and the ethical implications of implementing incentives in Big Data organisations.
- Chapter three aims to provide an understanding of the concept of ethical behaviour and considers the Virtue ethics approach as a suitable ethical framework to apply in Big Data organisations. Three key research questions are explored concerning: the features of Virtue ethics that distinguish it from other ethical approaches, the ethical challenges created by Big Data, and the integration of incentives and virtues in Big Data organisations.
- Chapter four aims to further the argument by discussing why incentives and a Virtue ethics framework should be integrated in order to promote virtuous behaviour. The discussion includes the benefits and risks of incentivising virtuous behaviour in Big Data organisations, and provides examples of how this system can be implemented.
- The final chapter provides a summary of the findings. It is revealed that by implementing a technomoral framework to incentivise virtuous behaviour, ethical behaviour can be improved in Big Data organisations. Recommendations on how to implement incentives for virtuous behaviour in Big Data organisations are discussed, and suggestions for future research in this context is provided.

Chapter 2

Conceptualising incentives

2.1 Introduction

The aim of this study is to evaluate if integrating incentives and Virtue ethics can improve ethical decision-making skills of employees in Big Data organisations. It is proposed that Virtue ethics could provide a framework as to how employees should conduct themselves in Big Data organisations, and incentives can be used to reinforce this virtuous behaviour. With this goal in mind, the purpose of this chapter is to review the existing literature regarding the impact of organisational incentives in order to determine if incentives can be adjusted and applied in the Big Data context. This chapter will focus on four research questions regarding (a) the concept of incentives and the significant role psychology plays in understanding how human behaviour is influenced by organisational incentives, (b) the types of incentives available in order to determine which incentives could be effective in Big Data organisations, (c) the risks associated with incentives, and (d) the ethical implications of implementing incentives in Big Data organisations, highlighting ethical issues that are emerging in the context of Big Data analytics.

Due to a new ethical landscape, the way organisations operate has changed significantly and therefore conventional organisational tools, such as incentives, should be adjusted to ensure they are effective in this new landscape. Profit has been the key factor in measuring success in businesses for many decades, resulting in high bonuses and incentives paid to executives. This is one of the many factors that has resulted in our current ethical landscape, one of making profit at all costs and human manipulation for profit. Accordingly, we need to rethink the role incentives has played in this landscape so that we can reconsider our success factors and change the direction we are headed. Vallor (2016) states: “The ethical dilemmas we face as 21st century humans are not business as usual, but require a novel approach” (Vallor, 2016: 9). This suggests that we need to reimagine our current business models so that they align with humanity’s best interests (Ferris and Harris, 2019). The first section of this chapter explores the role that psychology plays in understanding how organisational incentives influence human behaviour as it is essential to understand the workings of human behaviour in order to influence it.

2.2 Psychology of incentives

When trying to understand the link between incentives and behaviour it is necessary to examine the role that psychology plays in explaining human behaviour in order to identify ways to influence it. Behaviourism was the dominant theory in experimental psychology for many decades, and its influence still exists today (Spielman et al. 2014). Behaviourism assisted in establishing psychology as a scientific discipline through its objective methods and experimentation (Spielman et al. 2014). Behaviourism aims to explain human and animal behaviour in terms of reinforcing external physical stimuli that elicit responses (Graham, 2019). Contributors to the field include Ivan Pavlov (1849–1936) and John Watson (1878–1958). One of is most infamous contributor's is B. F. Skinner (1904–1990). Skinner presented the concept of operant conditioning, which is learning that occurs through rewards and punishments, and his research led to the theory of reinforcement, which is the probability of an activity occurring based on the consequences of a specific behaviour (Spielman et al. 2014). Reinforcement is one of the insights that survived the school of Behaviourism. Although this principle was an important discovery about human behaviour, Skinner did not make room for free will and rational thinking and many psychologists did not agree with this approach. Noam Chomsky published his criticism of Skinner's behaviourism in 1959, arguing that it could not adequately explain the complex mental process of learning language. This criticism, along with advances in new technology, gave rise to a cognitive revolution, making way for mind-based theories on complex symbols and computational procedures (Thagard, 2019). Critics argue that behavioural theories are too deterministic and do not include internal influences such as thoughts and feelings, where Cognitive psychology includes these aspects (Roediger, 2004).

Cognitive psychology involves the study of the mind and intelligence, incorporating other fields such as philosophy, psychology, artificial intelligence and neuroscience (Thagard, 2019). Contributors include Ulric Neisser (1928–2012), George Miller (1920–2012), and Jerome Bruner (1915–2016). Cognitive psychologists engage in theorising and computational modelling, mainly based on experimentation with humans (Thagard, 2019). Behaviourism is dismissed by cognitive experts who argue that its experimental methods of studying how animals behave in their natural and social environment are irrelevant. Cognitive experts argue that Behaviourism only studies what is observable and measurable, and there are various hidden aspects of an individual that are important in their personalities and learning capabilities (Roediger, 2004). Instead, Cognitive psychologists argue that the brain is the only way to understand the real causes of behaviour (Graham, 2019). Cognitive psychology recognises critical thinking as a necessary skill for contemporary life and that this skill contributes to making ethical judgments. This explanation of human behaviour assists in understanding how to influence employees behaviour in the workplace. This research reveals

that reinforcing behaviour using reward and punishment in order to elicit specific behaviours is a successful method of learning, however we should also take free will and mental cognition into account and acknowledge that humans learn from the consequences of their behaviour, and based on these consequences they can improve their behaviour. Employees could therefore be recognised and rewarded for their ethical behaviour with external motivators, supported with rewards that also motivate the innate drive to be virtuous and to make good decisions in order to do the right thing according to their inherent character.

An incentive system is fundamentally a reward system with an underlying assumption that the promise of a reward is an effective motivator. Incentive systems rely on the presence of motivators that an employee will value and is able to attain. For example, when an employee identifies an incident that exposes a colleague's dishonesty and reports this incident, recognising them with praise publicly, or in a performance review, could reinforce the behaviour. The act of acknowledgement is a reward for identifying unethical behaviour, for following the whistle-blowing process, and for reporting the behaviour to a manager after going through the mental process of contemplation weighing the consequences of reporting the behaviour, or not reporting the behaviour, and for ultimately making the decision to report the incident. This example demonstrates the role that psychology plays in understanding human behaviour and facilitates the identification of ways to influence human behaviour with the goal of producing ethical behaviour. Although applying rewards and punishments as mechanisms of controlling behaviour through stimulus and response can be used as a learning technique, organisations also need employees who are capable of learning by cognitively processing the consequences of their behaviour and learning from these consequences in order to constantly strive for excellence. This cognitive process can also be encouraged by recognising when employees do this successfully and rewarding them appropriately, and recognising when it is done unsuccessfully and addressing it appropriately.

Many Big Data organisations, such as marketing companies and social media giants, use incentives to influence behaviour in order to sell products and gain subscribers. The "follow" and "like" functions in social media attract individuals to use these functions in order to receive attention from other people, however the companies are actually collecting subscribers' personal data to use for advertising purposes on these platforms to influence their behaviour in order to increase various companies' services and products. Incentives are successfully being used to manipulate behaviour for money-making purposes, which raises the question if incentives could also be used to influence behaviour to act virtuously, making good choices for the betterment of the organisation, and for the welfare of society? It is worth considering if incentives could be used to capture the attention of people to behave ethically, and not only for purposes of profit, or at the very least, work towards a balance of the two options.

As it is evident that incentives do influence human behaviour, incentives in the workplace are analysed next in order to determine the impact of organisational incentives.

2.3 Impact of incentives

In 2002, a comprehensive study was conducted by Stolovitch, Clark and Condly, with the aim of creating clear and accurate conclusions regarding the use of incentives in the workplace. They evaluated trends and information from more than forty-five studies, as well as input from online questionnaires and telephonic interviews from a sample of 145 American organisations that use incentives. Their research findings revealed the following: (1) Well-selected and managed tangible incentives (e.g. money) can greatly increase work performance; (2) When tangible incentives are applied and managed well, they increase work performance by an average of 22%; (3) Tangible incentives can greatly increase individuals intrinsic interest in these tasks; and (4) Claims that tangible incentives often cause unintended decreases in intrinsic value is not supported by current research.[7] In 57% of the cases registered, objectives were either met or exceeded (Stolovitch, Clark and Condly, 2002). They found that tangible incentives work differently based on the *conditions* in which they function. Their findings revealed that: (1) In order to encourage employees to try a new activity, tangible incentives produce an average of 15% improvement in performance; (2) In order for employees to focus reaching a goal, tangible incentives increase performance by 27%; (3) To encourage employees to think intelligently, tangible incentives increase performance by 26%. Their findings also revealed that organisations who use incentives are able to recruit and keep higher quality employees (Stolovitch, Clark and Condly, 2002). The lowest result (to encourage employees to do something never done before) is thought to be due to the fact that new targets may require new knowledge and skills, therefore the incentive may motivate employees, but the new target cannot be achieved without training first (Stolovitch, Clark and Condly, 2002).

Their findings also revealed that incentivised *teams* increase their performance by 45% yet incentivised *employees* increase performance by only 27%. This difference appears to result from the monitoring that takes place in teams thus revealing that peer pressure has significant influence (Stolovitch, Clark and Condly, 2002). The research also revealed that financial rewards result in a 27% overall improvement in performance while nonfinancial rewards result in a 13% improvement in performance (Stolovitch, Clark and Condly, 2002). Findings also

[7] Research by Ledford, Gerhart and Fang (2013) is discussed in section 2.4 regarding incentives not decreasing intrinsic value.

revealed that incentives are appreciated by employees and management (99%), however, the *implementation* of these incentives results in complaints by 98% of the survey respondents.[8] This tells us that the impact of incentives depends on fair implementation and management strategies (Stolovitch, Clark and Condly, 2002).

In terms of *value* of exceeding work targets, the findings show that employees value work tasks more when paid for exceeding work targets, have more confidence, are more determined, and strive for higher levels of achievement (Stolovitch, Clark and Condly, 2002).

In terms of *types* of incentives, findings show that financial rewards result in a 27% improvement in performance while gifts produce a 13% improvement. The reason for this difference may be that money has a shared value, where a gift may not be valued equally by all employees (Stolovitch, Clark and Condly, 2002). It is assumed that gift programmes may be inadequately executed and additional research is required with regard to views and impact of these types of incentives (Stolovitch, Clark and Condly, 2002).[9]

In terms of *recognition*, findings revealed that it is a factor in 26% of incentives, however, the research reveals that some employees consider this the least worthy. Recognition refers to the acknowledgement and appreciation of positive behaviours, and this could include praise or any small gesture that is important to employees. It is known that job satisfaction depends on recognition, so while recognition incentives do not seem to result in an increase in performance, if combined with financial or gift incentives, they may significantly improve performance. Recognition does provide future value for employees, for example in the consideration of promotion (Stolovitch, Clark and Condly, 2002). Tessema, Ready and Embaye (2014) argue that employee recognition can arise from financial and nonfinancial rewards, but employees are more likely to be motivated with nonfinancial rewards such as recognition. Their findings show that employees who feel appreciated are more positive about their contribution, and they conclude that recognition can increase performance (Tessema, Ready and Embaye, 2014*).*

In terms of *timeframes*, findings revealed that the longer the incentive programme, the greater the results. The research shows an increase in performance in the following cases: 44% for programmes extending over one year; 29% for programmes for one to six months and 20%

[8] Incentives, Motivation and Workplace Performance: Research & Best Practices: http://www.hsa-lps.com/Performance_WS_2002.htm

[9] Norberg (2017) conducted a study which hypothesized that important characteristics associated with employee incentives will be affected by the reward currency, specifically hypothesizing that planning, word-of-mouth, satisfaction, and recall of use will significantly differ by currency. The exploratory study compared incentive participant behaviours for cash, gift card, and points programmes. Based on the findings, reward satisfaction was significantly lower for gift cards compared to cash and points. Available at: https://onlinelibrary.wiley.com/action/showCitFormats?doi=10.1002%2Fpiq.21233

for programmes lasting less than a week. They note that the reasons for performance differences in long-term programmes are due to allowing additional time to analyse the programme to monitor fairness, allowing more time for employees who did not take part to be convinced after seeing other employee's success, and employees may have adapted to the pressure of incentivised tasks and were able to retain higher levels of performance without much effort (Stolovitch, Clark and Condly, 2002).

In terms of *agency*, employees question if the organisation will adequately act in a fair way by supporting performance and providing the incentives fairly. Employees who believe that they are able to achieve high performance may not trust that the organisation will provide the support required or may act unfairly and undermine their efforts to achieve high performance. Although over 90% of survey respondents liked their organisation's incentives, almost the same amount had concerns regarding the way the system was implemented and managed. This reveals that confidence in an organisation's *management* of the incentive system is key. Confidence in incentives is fostered when employees observe the incentives are distributed fairly and consistently, when employees are included in the design and implementation processes, and when communication is clear. Tasks such as timelines of payment, fairness in feedback, monitoring and training are essential factors in the success of incentive systems (Stolovitch, Clark and Condly, 2002). In summary, their overall findings revealed that fair and well-implemented incentives *do* influence behaviour and significantly improve performance.

The incentive research highlights that there is an important distinction to be made between different types of incentives, namely intrinsic and extrinsic incentives. These types of incentives are explored next. Where incentives are associated with extrinsic motivations, Virtues are associated with intrinsic motivations, which poses a potential contradiction for this study. It raises the question if these two mechanisms are in conflict with one another, or if they could be integrated to work together?

2.4 Types of incentives

Many disciplines study various forms of motivation as potential drivers of behaviour. A distinction can be made between intrinsic and extrinsic motivation. Ryan and Deci (2000) recognise there are different forms of motivations based on different goals that lead to decision-making and taking action. Intrinsic motivation refers to completing an activity because it is inherently rewarding in itself, where extrinsic motivation represents the completion of an action because it leads to an external or tangible outcome (Ryan and Deci, 2000). Research

reveals that the quality of employee experience and performance can be different depending if employees perform for intrinsic or extrinsic purposes (Ryan and Deci, 2000).

2.4.1 Intrinsic and extrinsic incentives

Ryan and Deci (2000) describe *intrinsic* motivation as completing an action for its inherent fulfilment rather than for a separate result, suggesting that when an employee is intrinsically motivated, they act for the pleasure and interest of the task rather than the gaining of rewards. They explain that humans are active and curious, willing to learn and explore, even without rewards to do so (Ryan and Deci, 2000). They argue that humans have a basic need to gain fulfilment from engaging in interesting activities, as well as innate needs (Ryan and Deci, 2000). According to self-determination theory, activities that are intrinsically motivated provides the satisfaction of innate universal psychological needs, such as autonomy, competence and relatedness (Ryan and Deci, 2000). This information is valuable as it can be used to design organisational tasks and incentives to increase motivation. An effective rewards system can increase intrinsic motivation by providing feedback so that employees can learn and continuously grow (Ryan and Deci, 2000). Employees require intrinsic motivation to want to learn and the system provides feedback that helps them repeat this behaviour and this creates self-worth.

Ryan and Deci (2000) describe *extrinsic* motivation as the completing of an action to receive a separate result. This means that employees complete an action to earn a reward or to avoid a punishment. The goal is often for these motivators to help encourage employees to participate in specific behaviours long enough for them to then experience intrinsic rewards which should encourage them to continue engaging in the behaviour (Ryan and Deci 2000). Contrary to the findings of Stolovitch et al (2002), Ryan and Deci find that the interaction between intrinsic motivation and extrinsic incentives can produce unintended consequences, as expected material rewards can undermine intrinsic motivation (Ryan and Deci, 2000). They argue that intrinsic motivation can be crowded out by financial incentives, and the incentive mechanism then fails to improve performance as the motive for completing tasks has changed (Ryan and Deci 2000). Claims that extrinsic rewards may weaken intrinsic motivation were originally derived from self-perception and attribution theories. According to these theories, an individual's perceptions about the causes of ongoing behaviour strongly influence future motivation and performance. In the absence of external controls, an individual will attribute their behaviour to intrinsic interest or motivation and will continue to engage in the behaviour when extrinsic controls are not present. But if extrinsic controls are present, behaviour will be attributed to those controls and, as a result, will not readily occur in their absence in the future

(Dickinson, 1989). Ryan and Deci's research (2000) reveals that employees don't have to be enticed or rewarded in order to work hard when they feel intrinsically motivated as they find reward in the work itself, however, when employees feel extrinsically motivated, they are inclined to do the minimum required to get the reward or to avoid dismissal (Ryan and Deci, 2000).

According to Ledford, Gerhart and Fang (2013), extrinsic rewards do not undermine intrinsic motivation, and effects on intrinsic motivation do not result in making extrinsic rewards ineffective. They argue that focusing only on intrinsic motivation is not a practical strategy for organisations, and that total motivation is a function of external and internal motivation, and extrinsic motivation should not be ignored (Ledford, Gerhart and Fang, 2013). They base this argument on research they have reviewed of more than one hundred studies on this topic in laboratory and applied settings, in psychology, business, education and economics. They argue that the findings do not demonstrate that incentives cannot work due to negative effects on intrinsic motivation (Ledford, Gerhart and Fang, 2013). They also argue that after the meta-analysis by Deci et al. (1999) found strong support for the negative effects of rewards on intrinsic motivation, Eisenberger et al. (1999) reanalysed a subset of forty-three field studies from Deci's sample and found the opposite results (Ledford, Gerhart and Fang, 2013). This research found that rewards that were dependent on explicit performance goals increased intrinsic motivation, especially when considering self-reported intrinsic motivation. The research demonstrated that rewards tend to increase feelings of competence and self-control, and that high standards, pressure and competitiveness can actually enhance these effects. Ledford, Gerhart and Fang (2013) conclude that rewards clearly tend to increase performance, and this is because they increase *total* motivation – extrinsic plus intrinsic motivations.

Although intrinsic motivation is often considered the preferred form of motivation, extrinsic incentives are useful in promoting behaviours that are not intrinsically interesting to increase engagement. An example of this is exercise; not all individuals have an intrinsic desire to exercise however, due to external incentives they start to exercise and over time realise the intrinsic value it provides, such as feeling healthier and energetic, and losing weight, which results in self-confidence. This could align well with ethical behaviour as employees may be more focused on finding shortcuts to meet targets, but by behaving ethically so as to receive an extrinsic reward, they could experience the benefits of behaving virtuously. Virtuous behaviour has intrinsic rewards, such as building trust with colleagues, and a sense of continuous progress. By using both forms of motivation this could increase the total motivation and together could provide the necessary behaviours required by motivating individuals from within, and creating motivation from external forces from the organisation to reinforce intrinsic behaviour. Types of incentives that could be applied for this purpose are discussed next.

2.4.2 Financial and nonfinancial incentives

According to Cassar and Meier (2018), economists describe work as an exchange of time and effort for money, however the assumption that money is what matters most for motivation is not always true. Other important motivations include the drive to contribute to an organisation, make an impact, apply skills, and solve challenges. Research shows that employees care about more than just money. Research using survey and experimental methods has shown that nonfinancial incentives and nonfinancial aspects of a job have significant impacts on job satisfaction and productivity (Cassar and Meier, 2018). Work represents more than simply earning an income; for many employees, work is a source of meaning (Cassar and Meier, 2018). Nonfinancial aspects include factors such as learning, creativity, and curiosity, and these can be rewarded with nonfinancial rewards such as added responsibility, promotion, appreciation, flexibility, and time off. Deloitte's survey in 2013 revealed that almost all 350 US listed public companies surveyed use short-term incentives (99%) and 88% use long-term incentives (Moxey, 2016). Long-term financial incentives reward employees for contributing to sustained organisational performance over a period of years, and encourage good employees to remain with the organisation (Moxey, 2016).

Drawing from this research, it is evident that a combination of intrinsic and extrinsic incentives, as well as financial and nonfinancial incentives, should be used in a rewards strategy with the aim of achieving maximum effectiveness to achieve performance targets and encourage behaviours required in an organisation. Incentives should be used appropriately, where they are shown to be the most effective, such as appealing to an employees' intrinsic need for recognition, while rewarding employees visibly and financially for their efforts, and this strategy should elicit the appropriate motivations required for these purposes. In the context of changing behaviour versus improving performance, nonfinancial incentives such as recognition, appreciation, and promotion are more effective and elicit long-term changed behaviour, which could be suitable for influencing ethical behaviour. Distinguishing between the different types of incentives highlights the potential risks that are associated with incentives, and these are explored next.

2.5 Risks of incentives

According to Moxey (2016), research indicates that risks from formal incentives arise due to the way employees respond to incentives in order to achieve them, sometimes causing unintended consequences. Employees often go to great lengths in order to achieve incentives, sometimes resulting in cutting corners, falsifying figures, or even breaking laws (Moxey, 2016).

He discusses risk factors such as internal, external, and personal drivers of unethical behaviour created by incentive systems. He argues that internal drivers of unethical behaviour are factors such as peer pressure, socialisation, isolation and complexity (Moxey, 2016). He explains that peer pressure arises when an employee is expected to take part in unethical activities by their colleagues. Employees do not always feel confident to stand up to their colleagues which can result in participating in unethical acts (Moxey, 2016). Socialisation is described as the way new employees are encouraged to accept and practice unethical acts. Isolation creates opportunities for unethical behaviour to take place, unnoticed (Moxey, 2016). Lastly, complexity creates opportunities to disguise unethical behaviour in complicated processes, especially in combination with isolation (Moxey, 2016).

Moxey (2016) further argues that external drivers of unethical behaviour are factors such as investor expectations, business models, and regulations. He explains that listed organisations face pressure from shareholders to be profitable and increase share prices, and some organisations go to great lengths to ensure their financial numbers are in line with analysts' expectations, sometimes resulting in accounting fraud (Moxey, 2016). These external drivers are at the heart of the problem with Big Data analytics and the social media platforms business model. The race to attract attention, drive usage, and make money is to meet shareholder's expectations. There are limited regulations in place to govern this business model and the practices of these organisations. We are facing an ethical predicament where we find ourselves in a situation where self-interest is at odds with our collective interests. We need our information societies to build educational, political, and media structures that are needed to develop wisdom, skills, and virtues (Vallor, 2016), but instead they are used to create money-making monopolies.

Personal drivers of unethical behaviour are factors such as rationalisation and ethical distance (Moxey, 2016). Moxey explains that collaboration among employees is a common factor in the instances of corporate scandals, for example at Enron. These employees were not typical criminals but were employees who justified committing corrupt acts through rationalisation (Moxey, 2016). Rationalisation includes denial of responsibility, denial of harm, denial of a victim, and that the ends can justify the means. When employees rationalise their behaviour, they don't believe they are acting unethically as they believe they have a justifiable reason for their behaviour (Moxey, 2016). Social media companies rationalise their behaviour when they find themselves under pressure, or in uncomfortable situations, and they are asked to explain their behaviour based on their use of data analytics. They use denial and delay tactics to make changes that should protect user privacy and prevent the spread of disinformation. Mark Zuckerberg, Facebook's CEO, denied that fake news on Facebook influenced the 2016 elections, and denied censoring the news and trends it showed. Only when he was called to

face questions in front of the US Congress did he admit that changes needed to be made. Lastly, ethical distance is when employees are far removed from the results of their conduct. Employees will be more likely to engage in unethical behaviour if they do not know who will suffer from their behaviour (Moxey, 2016).

This research provides valuable information required when designing and managing incentive systems, in order to understand possible unintended consequences and in order to prevent employees rationalising unethical behaviour, looking for loopholes, falsifying figures or breaking rules or laws in order to achieve incentives (Moxey, 2016).

Another critical risk is the ethical use of incentive systems. A study by Fleischman, Johnson, Walker and Valentine (2019) examines the potential ethical costs linked to incentive-driven and goal-induced employee behaviour from a management view. In an experiment, 243 MBA students were asked to evaluate a hypothetical employee's ethical conduct influenced by an incentive system. Participants played the role of the employee's manager and were asked to evaluate the ethicality of the employee's ethical or unethical behaviour as well as the outcomes of the behaviour, which were either favourable or unfavourable to the organisation. The results revealed that participants disregarded the ethical considerations of the behaviour when the outcome was favourable to the organisation (Fleischman et al. 2019). Management's ethical considerations in decision-making is important because they are accountable for upholding the organisation's ethical culture and reputation (Fleischman et al. 2019). The devastating consequences associated with corporate scandals and data breaches of the past several years have highlighted the importance of sound managerial ethical decision-making for responsible leadership in organisations (Fleischman et al. 2019).

A key managerial decision linked to organisational ethics is the design and implementation of incentives which drive employee motivation and performance (Fleischman et al. 2019). Management holds a key role in demonstrating the acceptable ethical behaviour in the organisation by their reward and punishment activities and therefore should consider all possible consequences of these activities (Fleischman et al. 2019). Incentives can also encourage unethical behaviour and incentive literature does not highlight the aggressive goals that often result in unethical conduct (Fleischman et al. 2019). Findings reveal that managers' likelihood to get involved in correcting unethical behaviour reduces when the outcomes are favourable for their personal gain, or for the organisation, so they are prepared to overlook the consequences of the outcomes achieved (Fleischman et al. 2019). Again rationalisation of the ends justify the means is a risk to incentives. This study highlights the importance of awareness of these actions and the importance of the balance that is required between rewarding positive behaviour and deterring undesirable behaviour (Fleischman et al. 2019).

Fleischman et al. (2019) explain three key underlying reasons why performance-linked incentives may lead to unethical behaviour: (1) Targets may be so difficult to meet that employees think that they need to compromise their morals to achieve them; (2) Performance-linked incentives are a sign from management that high performance is valued above everything else; and (3) Incentives create employee buy-in to the required goals that they can ignore ethical considerations of the actions in order to meet them (Fleischman et al. 2019). This research also reveals three reasons why management should consider the potential undesirable effects of incentive-based targets: (1) The link to potential increased risk of unethical behaviour and fraud; (2) The pressure on employees to behave unethically in order to achieve goals by maximizing immediate financial rewards at the cost of the organisation's reputation; and (3) Lack of motivation of management to get actively involved when moral considerations are unethical as the outcomes are favourable for their personal gain and for the organisation (Fleischman et al. 2019). This research demonstrates how critical it is to ensure that incentive systems are designed and implemented with organisational culture in mind. Incentives and outcomes achieved can positively influence organisational culture, but can also have damaging effects when not managed well. Management should be aware of the unintended consequences of incentives to ensure these do not emerge.

Reflecting on the research regarding the risks of incentives makes one think about the cause of corporate scandals and how incentives have played a fundamental role in the downfall of many institutions, and raises the question why over so many years has this unethical behaviour driven by monetary rewards not been addressed effectively? Enron's incentive system resulted in an unethical culture and promoted self-interest above all else. Poor performance was ridiculed and employees were fired through a "rank and yank" process (Sims and Brinkmann, 2003). Enron's pursuit of profits resulted in the creation of a brutal, competitive reward system driven by greed (Painter-Morland et al. 2018). Extremely high bonuses were paid to executives, in the form of stock options, which in turn enticed executives to keep the stock price high at any cost (Sims and Brinkmann, 2003). Annual bonuses of one million Dollars were paid to traders, and even higher bonuses were paid to executives. Employees' aggressive attitude was considered extremely effective. The executives at Enron played favourites, inviting top performers to spend weekend vacations with the executive staff (Sims and Brinkmann, 2003). The best workers (determined through financial results) received excessive incentives and bonuses. Retention bonuses were paid shortly before the company declared bankruptcy to about 500 executives which ranged in value from one thousand Dollars to five million Dollars (Sims and Brinkmann, 2003). Enron rewarded employees who embraced their aggressive culture and rewarded employees based on short-term profits and financial measures (Sims and Brinkmann, 2003). These practices demonstrate the consequences of

incentivising unethical behaviour. Employees were well paid and ultimately stopped asking questions about the unethical practices within the organisation (Painter-Morland et al. 2018). Similarly, in 2017 Steinhoff's[10] former CEO, Markus Jooste, received a bonus of approximately thirty-four million Rand without requiring approvals in the months before the global retailer almost collapsed during an accounting crisis (CNBC Africa, 2018). How did Steinhoff's executives walk away with large bonuses while it was clear they were directly involved in the decision-making that led to the corruption? Again, this raises the question of what has been done since to change the way organisations seem to reward unethical behaviour?

With the aim of reforming financial institutions, legislation was implemented in the US after the Enron scandal. The Dodd–Frank Act was implemented in 2010 to avoid similar scandals. It directs regulators to implement regulations, it creates additional bureaucracies, and imposes financial institutions to comply with its requirements (Schoen, 2017). According to Baily, Klein, and Schardin (2017), the financial sector in the US is much safer than before the crisis due to this Act. They argue that stability has improved without seriously harming efficiency and economic growth, and that they are on the right path to ending the idea of organisations believing they are too-big-to-fail. They also argue that consumers are better protected. There are now safeguards for consumers such as processes to remove misleading financial products from the market place. They do note that it still needs to be fine-tuned and could improve in the areas of supervision and inter-agency cooperation (Baily, Klein, and Schardin, 2017).[11] It is evident that legislation cannot completely eradicate all scandals as people are always susceptible to greed. The Wells Fargo scandal in 2016 is evidence of this.[12] This incident occurred even after this legislation was passed in 2010.

The stakes have now been raised with the emergence of Big Data analytics due to the size and scale of the impact it has on society. This information is used to control our reality, and technology is directing our behaviour towards business-related outcomes, instead of towards our own autonomous desires. This is shaping our moral future, which leads to the problem at hand, revealing the critical need for additional mechanisms to manage this ethical risk, in order to redirect the direction society is headed.

[10] Inside the Steinhoff saga: https://www.cnbcafrica.com/insights/steinhoff/2018/06/28/steinhoff-rise-fall/

[11] The Impact of the Dodd-Frank Act on Financial Stability and Economic Growth: https://www.jstor.org/stable/10.7758/rsf.2017.3.1.02#metadata_info_tab_contents

[12] Wells Fargo Cross-Selling Scandal: https://corpgov.law.harvard.edu/2019/02/06/the-wells-fargo-cross-selling-scandal-2/

2.6 Incentives and Big Data

The incentive research findings reveal that people do what they are incentivised to do, and that fair and well-implemented incentives do influence behaviour and significantly improve performance. Drawing from this research it is proposed that incentives could influence behaviour in Big Data organisations as well. These organisations are like any other organisation, but use Big Data analytics to produce new information in order to make better predictions. Financial incentives are already included in the business model of these organisations to drive employee productivity, as well as innovation to find ways to attract clients or subscribers. However, incentives in the Big Data context are also being used to manipulate clients' behaviour for money-making purposes. Harris (2019) argues that there is a thin line between incentivising the capturing of human attention, which is normal industry practice, and the manipulation of 'mindless' human behaviour (Ferris and Harris, 2019). Traditional marketing practices cannot reach the same scale of audience, with the same level of ease, as Big Data organisation's efforts. However, Big Data usage has been seen as a breach of privacy, and a distortion of the power relationship (Martin, 2015). This is why it is important to identify ways to encourage and reinforce employees' virtuous behaviour in Big Data organisations. It is my contention, though, that the positive side of incentives could be used for this purpose to influence the behaviour of employees in Big Data organisations to act virtuously and to make good choices. It is worth considering, I think, to determine if incentives could be used to capture the attention of employees to behave ethically, and not only for purposes of profit, or at the very least, work towards a balance between the two options.

Big Data is used globally, however, corresponding legal and ethical frameworks are lagging behind and therefore other mechanisms for governing data need to be instituted as soon as possible. Using mechanisms that are already in existence in organisations, such as incentives, could make good sense in this context. Moving from short-term financial incentives to long-term nonfinancial incentives could also be a productive way to apply incentives in Big Data organisations. The research discussed above shows that nonfinancial incentives are more effective and elicit long-term changed behaviour, which could be more suitable for influencing ethical behaviour in order to build better ethical habits. A combination of intrinsic and extrinsic incentives, as well as financial and nonfinancial incentives, could be used in an incentive system with the aim of achieving maximum effectiveness to achieve performance targets as well as encourage virtuous behaviour. Examples of suitable nonfinancial ethical incentives are: recognition, appreciation, promotion, good performance reviews, and consideration for flexibility or time off.

Research findings also reveal that incentivised teams increase their performance by 45%, due to the monitoring that takes place in teams thus revealing that peer pressure has significant influence (Stolovitch, Clark and Condly, 2002). This is useful to note as where employees within Big Data organisations typically work in teams, for example to innovate and design products, they are more likely to consider the ethical risks if the incentive includes criteria for this as the team members will then hold each other accountable. Even the thought of being exposed as unethical within a team could promote the correct behaviour to avoid social shame by team members. Research also reveals that work represents more than simply earning an income for many employees, and is a source of meaning (Cassar and Meier, 2018), therefore including ethical criteria in incentives to create ethical outcomes could also support in fulfilling this desire.

A challenge that requires important dialogue is determining moral accountability in Big Data organisations. Floridi (2015) argues that it is unclear who should be held accountable when harm is caused in the new digital era, thereby creating a need for distributed responsibility. He argues that we are lacking an ethical framework that can treat the infosphere as a new environment worth the moral attention and care of those inhabiting it (Floridi, 2015). This study proposes the use of Virtue ethics as such an ethical framework, as this approach focuses on traits which provide guidance as to how individuals ought to behave.[13] This could be more effective in Big Data organisations than a rule or duty ethics which needs to be constantly enforced and policed. There is a need for virtuous employees in Big Data organisations, who can make responsible decisions, and also take responsibility for the future that Big Data organisations are helping to create. If we don't address our damaged infosphere, we will not be able to address the challenges that are inevitably doing to impact our future (Floridi, 2015).

Applying incentives to promote ethical behaviour in the Big Data context changes the conversation about ethics and incentives by challenging it in new ways, and in creating new opportunities for ethical responsibility, and how to incentivise this. The integration of incentives and Virtue ethics is explored in the next chapter.

[13] The Virtue ethics approach is explored further, and compared against other key approaches in Chapter 3.

2.7 Conclusion

This chapter outlined the current literature available on the use of organisational incentives, and highlights the opportunities and complexities of implementing incentives in an organisation. The role that psychology plays in explaining how to influence human behaviour was reviewed. The move away from Behaviourism towards Cognitive psychology was explained, showing that although the mechanical role of stimulus and response is required, this needs to be advanced to include mental activity where people make decisions using their mind and intelligence. Research reveals that people have intrinsic motivations of learning and creating self-worth. It was proposed that employees should be recognised and rewarded for their ethical behaviour with external motivators, supported with rewards and recognition that also motivates the innate drive to make good decisions. The research suggests that when motivating behaviour, rewards may be more effective than punishments.

Types of incentives were analysed and a distinction was made between intrinsic motivation, which refers to participating in an activity because it is inherently enjoyable and rewarding in itself, and extrinsic motivation, which refers to participating in an activity because it leads to an external outcome. Research revealed that a combination of intrinsic and extrinsic incentives, as well as financial and nonfinancial incentives, should be used in a rewards strategy in order to maximise rewards to encourage behaviours required in an organisation.

Potential risks were identified and discussed to create awareness in order to mitigate these risks when designing incentive systems. For example, incentives can backfire because extrinsic incentives may eliminate intrinsic motivations which are important to producing the desired behaviour. This risk can be managed when implementing an incentive system by appropriately finding ways to motivate employees intrinsically as well. However, Ledford, Gerhart and Fang (2013) argue that findings do not demonstrate that incentives do not work due to negative effects on intrinsic motivation. The potential ethical risks linked to incentive-driven employee behaviour were discussed, such as employees may think that they need to compromise their morals in order to achieve difficult targets, or are expected to deliver high performance above everything else. It was highlighted how management play a key role by implementing reward and punishment practices which could encourage unethical behaviour and emphasises how aggressive performance goals are frequently linked to unethical behaviour. The multiple corporate scandals that have occurred are testament to this. Creating awareness regarding this potential risk is critical when implementing incentives systems in organisations.

Applying incentives to promote ethical behaviour in the Big Data context creates new opportunities to consider moral responsibility. Using incentives that are already in existence

in most of these organisations would be the practical way to go, building on them, or adapting them. A shift from short-term financial incentives to long-term nonfinancial incentives could be a crucial channel for building sustainable ethical habits. A combination of intrinsic and extrinsic incentives could also be used in an incentive system with the aim of achieving maximum effectiveness to achieve performance targets as well as encourage the virtuous behaviour required in Big Data organisations.

This culmination of research reveals that incentives can positively affect behaviour, as long as they are managed and implemented well, and by making provisions for the potential risks and limitations that exist, and by being conscious of potential unintended consequences. Incentives could therefore be considered as a tool for managing ethical behaviour in organisations. In order to evaluate this concept of ethical behaviour, there needs to be a clear understanding of what organisations consider to be ethical behaviour, before applying a system of incentives to promote this. Ethical behaviour is discussed next, specifically in the context of Big Data organisations.

Chapter 3

Conceptualising ethical behaviour in Big Data organisations

3.1 Introduction

In order to evaluate if incentivising ethical behaviour in Big Data organisations could improve its employees ethical decision-making skills, it is necessary to understand the concept of ethical behaviour. This chapter aims to conceptualise ethical behaviour in the infosphere and determine what type of ethical framework is required for Big Data organisations. Crane and Matten (2016) state that organisations require basic ethical standards in order to function well, as ethical decision-making is complex and it involves employees on different levels of the organisation who each have different views and roles. They argue that in order to justify ethical decisions, it is essential that these decisions are made based on rational arguments and principles. Philosophy has been studied for centuries to determine principles regarding how one ought to act, resulting in a number of theories which have been developed to explain how to decide what is best for individuals, and society, when faced with moral dilemmas. Although there are many useful approaches available, Virtue ethics is proposed as a well-suited approach for the purposes of this study. Virtue ethics focuses inwards to the character of the individual and these traits provide guidance as to how employees should behave. To make decisions that only benefit the majority, as the Utilitarian approach suggests, or to only follow rules, as the Deontological approach suggests, is not suitable for Big Data organisations, due to the complexity of the processes that lead to the harmful outcomes of data misuse.

This chapter will focus on three research questions regarding (a) the features of Virtue ethics that distinguish it from other ethical approaches, (b) the ethical challenges created by Big Data, and (c) the integration of incentives and virtues in Big Data organisations. Some of the key challenges we are currently facing are the inability to adequately control and monitor the responsible collection and usage of data, protecting individual's rights to privacy, and the lack of moral accountability for the harm caused in the digital era. Big Data organisations require employees that are ethically responsible to overcome these challenges, and to help find solutions for them. This chapter proposes that we should implement an ethical framework, such as Virtue ethics, to improve the moral status of our infosphere, as well as implement a mechanism, such as incentives, to reinforce this behaviour. This chapter also includes a discussion regarding the specific conditions that should be met in order to effectively promote and incentivise ethical behaviour, such as organisational culture, values and leadership.

3.2 Ethical decision-making frameworks

Normative ethical theories are based on philosophical principles and these are central to business ethics in contemporary organisations as they guide the required ethical behaviour and describe what we ought to do (Crane and Matten, 2016). There are many different approaches based on different viewpoints. Some of the key approaches are Consequentialism, Deontology, and Virtue ethics. These are introduced below, with the aim of focusing on Virtue ethics as the proposed approach for promoting ethical behaviour in Big Data organisations.

Utilitarianism, an example of the Consequentialist approach, states that the moral status of the action is determined by the consequences of the action, and not the action itself. This approach focuses on the consequences of the decision to create good outcomes for the majority of people. John Stuart Mill (1806–1873) and Jeremy Bentham (1748–1832), are the leading advocates of this theory, which refers to morality as making the world as happy as possible, and each person's happiness is considered equally (Rachels and Rachels, 2015). The good outcomes are weighed up against bad outcomes, or harm. In an organisation, an action or decision is considered 'good' if it promotes general welfare more than any other alternative (Shaw, 2011). When applying this approach in the workplace, the relevant stakeholders are identified, and the consequences evaluated in terms of expected benefits or harm for each stakeholder, and decisions are then based on the option that produces the best overall result. In the context of Big Data organisations, this theory would play out in evaluating the consequences of data analytics and the use of this data to ensure it is used responsibly throughout the process, from collection of data, to initiatives implemented based on the data. According to Utilitarianism, organisations should use data analytics to maximise the creation of value for individuals and society. However, by promoting general welfare more than any other alternative, undesirable consequences still exist, even if marginally smaller. This decision-making framework would involve making trade-offs, and although the majority of those parties impacted may benefit, a portion may not, and this could have dire consequences. In theory this may seem justified, but in reality the stakeholders who are harmed may suffer real consequences, such as personal details being released or compromised. In the digital era, we have potentially lost the notion of freedom and consciousness as decisions are being made for us based on technology. In the digital world, AI (artificial intelligence) is often programmed using Utilitarianism as a moral framework to ensure the positive consequences of technology are maximised, but this may result in overlooking the negative consequences that may occur.

Another key approach is Deontology, which is a duty-based approach that argues the morality of an action is determined by a series of rules or principles, rather than based on the consequences of the action (Rachels and Rachels, 2015). Immanuel Kant (1724–1804), who is responsible for the most prominent and well-known form of deontological ethics, argues there is an absolute moral principle or 'categorical imperative' which states: "Act only according to that maxim by which you can at the same time will that it should become a universal law" (Rachels and Rachels, 2015: 121). This approach asks which rule is being followed when making a decision, and if this could be made into a universal principle or not, i.e. could this rule be applied to all similar decisions in future? If not, that decision should not be taken (Rachels and Rachels, 2015). Kant argues that individuals should treat others like they would want to be treated and respect others' rights, and that individuals should be treated with dignity and not be used as a means only to an end (Rachels and Rachels, 2015). When applying this approach in the workplace, we know that we have clear rules to follow and a duty to follow these rules, and no matter the consequences we should make decisions according to the rules. These rules can be based on frameworks such as organisational policies and codes of conduct. In Big Data organisations, this theory would play out in evaluating data analytics, and the use of this data, to ensure it is used responsibly by respecting individuals' privacy of information, and not violating individuals' privacy rights. Organisations should comply in upholding these rights. An example of this is when the FBI approach Apple to unlock a potential suspect's phone to assist with a murder investigation, they will not do so under any circumstances. When considering this approach, it raises the question if rules alone are sufficient to ensure organisations manage data responsibly? We have had rules since the establishment of businesses in society and history shows us this has not been sufficient to prevent scandals and misconduct. Once rules are designed and ratified in the digital world they are implemented into technology and there is no longer any moral agency or oversight of these decisions. For example, when we install Apps on our Smartphones and subscribe to services, we agree to sign away our privacy, and therefore our moral agency.

Making moral judgements based on consequences and rules *alone* do not appear to be enough to deal with the complex moral challenges of the digital age. We may benefit from a more holistic approach in judgement, and an approach that emphasises the role of an individual's character rather than doing one's duty or producing good consequences. We require an approach that can provide moral guidance and wisdom in these unprecedented times, which are filled with unclear challenges and undefined rules. Virtue ethics could be the right approach for this purpose.

3.3 Virtue ethics

Virtue ethics was founded during Ancient Greek times by Plato and Aristotle, and Confucius is also recognised as one of its sources. Virtue ethics was the prominent approach in Western moral philosophy until the Enlightenment period, where it was overshadowed by contemporary theories during the nineteenth century, and re-emerged again in the late 1950s (Hursthouse and Pettigrove, 2018). This theory suggests a set of ideals to which individuals aspire (Murphy, 1999), and emphasises the role of an individual's character and virtues rather than doing one's duty or producing good consequences. A virtue can be described as a trait of character, followed consistently, that is good for everyone to have (Rachels and Rachels, 2015). Using Virtue ethics in decision-making helps to take a more holistic approach in judgement, instead of only considering consequences or rules (Crane and Matten, 2016). This approach takes other factors into account, such as motives, character, moral wisdom and moral education (Hursthouse and Pettigrove, 2018). Whetstone (2001) states that Virtue ethics highlights the need for individuals to seek a social identity, and to seek a purpose for their lives. He argues that improvement and correction of mistakes is more advantageous than seeking to optimise each decision and action (Whetstone, 2001). He also states that the distinctive perspectives provided by Virtue ethics are needed to complete a practical ethic, which is an ability to identify the right thing to do in any given situation (Whetstone, 2001). Virtuous people are those willing to do what is right, even when it is difficult, and those courageous enough to stand up to those who act unethically. This could be a powerful tool in the Big Data organisation.

Patrick E. Murphy (1999) discusses six major dimensions of Virtue ethics that distinguish it from other ethical approaches:

(1) Virtue ethics focuses on the individual and their character traits, not on a particular rule, and the individuals' character development which influences their actions and decisions (Murphy, 1999).

(2) Virtues are good habits that are learned by practicing, and are contrasted with vices, which are the extremes of deficiency and excess of the trait (Murphy, 1999).

(3) Virtues are learnt by observing and imitating other's behaviour, which results in practicing good habits (Murphy, 1999).

(4) An individual does not have to be the most ethical individual to be considered virtuous. Aristotle suggests that individuals should strive for balance in life, and strive towards excellence (Murphy, 1999).

(5) Virtues should be viewed in context within a community setting, and an organisation can be considered a community as it is a community of mutually concerned as well as self-interested members (Murphy, 1999). Murphy argues that individual virtues can be translated into organisational virtues, for example, a reliable or trustworthy organisation (Murphy, 1999).

(6) Desires are key motivators in the purpose to live a virtuous life by constantly striving for excellence. The role of excellence is reinforcing positive behaviour (Murphy, 1999).

This can be illustrated with an example, such as courage as a virtue. A courageous employee is able to question others when necessary due to their innate belief that it is important to stand up for themselves or others. The employee who is fearful and does not stand their ground becomes cowardly and may not confront unethical behaviour, or may even go along with unethical behaviour due to fear of challenging other employees. The employee who fears nothing and confronts every potential risk becomes rash and may act too hastily. A courageous employee will take the appropriate amount of risk and continue to strive to learn how to determine when a risk is worth taking. A courageous employee will also act as a suitable role model for other employees who will learn this behaviour by observing this individual's actions.

Robert Audi (2012) states that an essential question posed by Virtue ethics is: "*What kind of person do I want to be?"* And suggests we can also ask "*what kind of businessperson do I want to be*?" (Audi, 2012: 286). He argues that our actions and decisions can be directed in business by living virtues such as fairness, honesty, loyalty, beneficence, self-improvement, and integrity (Audi, 2012). He argues that when managers encourage these virtues, and also role-model them, the effect on their employees can be inspiring (Audi, 2012). Virtue is not only an ability to do good, but an internal drive to do it for a good reason. This motivational power of virtue is crucial for the question of what kind of person, or businessperson, one wants to be (Audi, 2012). In order to determine what counts as acting virtuously, Virtue ethics appeals to practical wisdom in the context of the decision (Audi, 2012). Practical wisdom is an acquired trait that enables an individual to identify the right thing to do in any situation, such as applying sound ethical judgement at the right time, for the right reason (Audi, 2012). This is a core concept of Virtue ethics, which emphasises the importance of determining the correct decision, based on good motives, to resolve a complex ethical dilemma. This practical wisdom can guide us in business by upholding virtues such as honesty and integrity. Some criticism of this approach includes views that the virtues are incomplete and do not provide action guides, and therefore creates some uncertainty. The necessary traits of an ethical person are shared, but it is not clear what a person should do when actually facing ethical dilemmas (Rachels and Rachels, 2015). Other critics argue that moral behaviour is determined by the situation in

which moral agents find themselves and not by character traits of individuals. Virtue ethicists have responded to this challenge by arguing that this can be mitigated by a range of compensating moral and social techniques, and perhaps the most powerful response is that robust moral virtue is by definition exemplary rather than typical (Vallor, 2016).

Since the middle of the twentieth century, there has been a call for the return of the practice of Virtue ethics from numerous philosopher's and authors. In *Modern Moral Philosophy* (1958), Elizabeth Anscombe (1919–2001) motivates that Virtue ethics should be used as an alternative to Utilitarianism, Deontology, and Social Contract theories, based on her critical view of the state of ethics at the time (Driver, 2018). In *After Virtue*, Alasdair Macintyre (1981) proposes a system based on virtue developed through practices that are converted into habits of society, also based on his critical view of the state of ethics at the time. In *Ethics and Excellence,* Robert C. Solomon (1992) argues that capitalism requires not only capital but character as well. He argues that Business Ethics should be based on virtue, drawing on portions of Aristotle's ethics, such as that the organisation can be seen as a community, organisations search for excellence in order to achieve a purpose, and the importance of traits such as integrity and sound judgment are required in doing business successfully (Buchanan, 1994). In *Technology and the Virtues*, Shannon Vallor (2016) argues that "*virtue ethics* offers the most promising framework for living wisely and well with emerging technologies" (Vallor, 2016: 50). This recommendation is explored next.

3.4 Virtue ethics and Big Data challenges

Big Data presents a new era of discovery and innovation. Although there are severe risks for misuse of data, there are also many opportunities for improvement due to useful data analytics. For example, enabling government to use Big Data to act in our defence. During the COVID-19 virus outbreak across the globe in 2020, many governments declared a state of emergency in order to control the spread of the virus. One method used during this period was acquiring data from cellphone networks to track people who had been in contact with people who had tested positive for the virus. This was not conducted with individuals' permission but as an urgent requirement to life-saving information during a time of crisis. While some might view this as an invasion of privacy, others may see it as necessary in light of the global pandemic. In fact, even the new POPI Act provides for the collection of personal information if it is in the interests of national security. Technology has also been developed to track and trace the spread of the virus via a powerful digital network of app users. The COVID Alert SA App, for example, warns users if they are in the vicinity of a person who is on the list as a person who has been exposed to someone infected with Covid-19, and also shares this with

officials who can support those in this digital network. This results in trade-offs between health and privacy. This App could provide enormous societal benefits, but many citizens are hesitant to give free rein over their data to organisations and governments in control of this technology. Rules have not been developed yet to navigate these complex situations, and this has put a magnifying glass on the complexity of data ethics and reveals how important it is to find an approach that can deal with the current unprecedented moral questions created by the fast-paced and complex development of technology, and for those moral dilemmas still to come.

In *Ethics of Information*, Floridi (2013) argues that information ethics finds an ally in Virtue ethics. He states that the similarity between Virtue ethics and Information ethics is that they both treat the human being as a work in progress, striving for improvement. However Floridi's concern with Virtue ethics is that it is primarily focused on the individual character and source of the moral action, rather than on the receiver of the moral action as well, which is the patient, object, or environment affected by the action.[14]

In *Technology and the Virtues, A Philosophical Guide to a Future Worth Wanting*, Shannon Vallor (2016) explores the pertinent question of what should be done about new technologies and their related social challenges (creating the term of the *technosocial* as the focus of her book). She argues "the challenge we face today is not a moral dilemma; it is rather a moral *imperative,* long overdue in recognition, to collectively cultivate the technomoral virtues needed to confront this and many other emerging technosocial challenges wisely and well" (Vallor, 2016: 276). She argues that Virtue ethics is the most promising practical resource for learning how to cope with, and even flourish in, our increasingly uncertain and complex technosocial condition (Vallor, 2016). She describes how people have become dependent on global systems such as electronic communication, digital computation, banking, and health care, and that we don't realise the extent to which our lives are now technologically conditioned (Vallor, 2016). She explains that ethics and technology are connected because technologies provide specific patterns of thought and behaviour, and these create new possibilities for human action (Vallor, 2016). She argues that current decisions about how to live well are not only moral decisions, but they have become "technomoral" decisions, as they depend on the evolving technology that we rely on to support our lives (Vallor, 2016). These technomoral decisions are creating technomoral challenges, revealing the dire need for a new practical ethic that can provide wisdom during these uncertain times. She highlights that it has become unclear how much of the future moral labour will be performed by people (Vallor, 2016). She

[14] Floridi (2013) argues that according to Virtue ethics, the flourishing of an informational entity, and what this entity should be, is determined by the good qualities in that entity; and he notes the difference between this approach and information ethics lies in their ontologies and in the broader conception of what counts as a good entity in information ethics.

uses examples such as driverless cars, which are programmed to make ethical driving decisions on our behalf, and trading algorithms that direct the global flow of essential goods and wealth (Vallor, 2016). She claims that emerging innovations such as robotics, AI, communications technologies, digital surveillance, and biomedical enhancement technologies will fundamentally change our lives (Vallor, 2016). It is for these reasons, among others, that she recommends that a moral theory is required which includes a clear conception of how to live well *with* technologies. She argues that an approach is needed for us to globally address these emerging technosocial challenges collectively, which must enable shared moral discussion and commitment to the development of specific technomoral habits and virtues needed to meet this challenge (Vallor, 2016). Vallor (2016) declares: "fortunately for us, a tradition already exists in philosophy that can provide such a framework. That tradition is *virtue ethics,* a way of thinking about the good life as achievable through specific moral traits and capacities that humans can actively cultivate in themselves" (Vallor, 2016: 12).

Vallor (2016) describes the moral dilemma we currently face succinctly, and makes it clear why we cannot continue operating organisations in the same way as we have done in the past. With this book, she has created a realisation that we need to develop a moral character within ourselves that expresses the virtues (Vallor, 2016). She describes twelve virtues that she argues are relevant for ways of thinking about what it means to act correctly in relation to technology and other people, and describes traits that individuals must develop in order to live well with emerging technologies. These twelve virtues are embedded in a framework of moral practice that provides a robust action-guide. The twelve technomoral virtues are: "honesty, self-control, humility, justice, courage, empathy, care, civility, flexibility, perspective, magnanimity, and technomoral wisdom" (Vallor, 2016: 142). A description of these virtues follows below, beginning with the three virtues I believe are critical in Big Data organisations.

Technomoral honesty involves demonstrating respect for the truth and expressing the truth in proper ways, such as the way we should expose sensitive information and value privacy norms (Vallor, 2016). Our communication habits are shaping how we define the truth, when and how often we tell it, how we verify it, and what we do with it (Vallor, 2016). There is a lack of trust in online environments, such as social media, where the use of data analytics is used to spread misinformation and "fake news" for political or financial gains. It is evident today that our survival depends on our ability to obtain, verify, and share reliable information concerning problems such as global climate change and global pandemics (Vallor, 2016).

Technomoral courage involves the enduring ability to live a moral life (Vallor, 2016). Our present moral context is unpredictable and interdependent on technosocial change, and we need to be willing to experience some difficulty or harm in order to do what is necessary and

right for our infosphere (Vallor, 2016). Whistle-blowers who come forward to expose data misuse often lose their jobs, or they face social stigma with being seen as a “rat”, and sometimes face security threats. Courage involves sensible fear and hope about the dangers and opportunities created by new technologies, such as how we might react to the rise of biomedical engineering and robotic warfare (Vallor, 2016). We need to be able to intelligently judge what we should fear, and what we should hope for, and how best to act on our fears and hopes (Vallor, 2016). Technomoral courage involves the ability to give proper attention to our preservation and safety (Vallor, 2016).

For Vallor *technomoral wisdom* is practical wisdom, an authentic and well-cultivated skill that combines all of the other virtues of character that we need to live well with emerging technologies. Vallor (2016) explains that each of the other technomoral virtues is demonstrated best when applied with a practical wisdom, or an intelligence of how to appropriately apply these virtues. Technomoral wisdom is needed to make intelligent and practical decisions that affect us, in order to protect our infosphere for ourselves, and for future generations. Whistle-blowers, for instance, face difficult decisions in deciding if they should come forward – they must consider if they have the courage to potentially experience retaliation, are they willing to communicate the truth, even though they may be seen as “snitches”, are they willing to make a choice to stand up for what is good and just, even at the expense of their own safety, and are they willing to act as moral leaders for others? These judgements require a skill of intelligence of how and when to do this safely, for the right reasons.

The remaining virtues involve the following traits: *technomoral self-control* is the ability to align our desires with the good, and choose that which contributes to our present and future flourishing; *technomoral humility* recognises the limits of our technosocial knowledge and reminds us to avoid extreme optimism and pessimism towards new technological proposals; *technomoral justice* is the trait that seeks fair and equal distribution of technological benefits and risks; *technomoral empathy* is the concern with increasing other’s well-being; *technomoral care* is the emotionally responsive trait to meet others’ needs; *technomoral civility* aims to create and share the good life with others who hold different views of the good life; *technomoral flexibility* is the trait to change action, belief, or emotion according to unstable technosocial situations; *moral perspective* is the trait to focus on separate moral events as part of a meaningful moral whole; and *magnanimity* encourages moral ambition and leadership through demonstrating moral excellence (Vallor, 2016).

Vallor concludes that practicing Virtue ethics, and specifically practising these twelve technomoral virtues, will direct us to make better decisions that affect our long-term

sustainability as flourishing human beings (Vallor, 2016). She argues that the technological conditioning that we face keeps us from recognising that when we use certain technologies we may be choosing to go along with these technologies' vision of "a life lived well" instead of our own authentic vision (Vallor, 2016). The result of a lack of authenticity in living our own idea of the "good life" reveals why it is so important for Big Data organisations to include an ethical framework in their business strategy. Big Data organisations contribute to spreading this lack of authenticity by supplying an endless volume of data that is processed and sold to advertisers, in order to make money. Social media platforms believe that they create notions of the ideal way of life, and make us believe there are products and services we must have, and that we need attention from other people in order to feel good. But the reality is that these platforms often leave us feeling angry, jealous, or lonely. Their goal of attracting more users is to make more money, and to meet shareholder's expectations, and not to act in our best interests. As Floridi (2015) argues, new technology and manipulation of behaviour is increasingly creating a problem that is affecting our conception of who we are, how we socialise, our conception of reality, and our agency. It is for these reasons why it is so important for employees in Big Data organisations to implement and practice technomoral virtues (Vallor, 2016). Vallor (2016) provides an example where we could practice the technomoral virtues in the world of social media. Here, honesty takes on a new spin in the arena of sharing ourselves publicly, self-control becomes linked to our ability to avoid checking a smartphone every thirty seconds, humility recognises the need to admit that there are limits to our knowledge and our attention span, courage requires that we face our true hopes and fears as they relate to technologies, and empathy that we should not just allow ourselves to be moved by what we see about others through technology, but also to develop the courage to do something about it beyond merely hitting "like" (Vallor, 2016).

Based on Vallor's argument, bringing Virtue ethics into Big Data organisations is an important and necessary ethical strategy, in order to conduct business ethically with technology. The consequences and rules regarding data analytics are so unclear and undefined at this stage, and we cannot make informed decisions based on what we currently know. Therefore, we require a framework that provides the moral guidance required to navigate the infosphere. Applying a technomoral framework in Big Data organisations would provide employees with a list of descriptive behaviours, that when practiced sincerely and honestly, would typically result in ethical actions. Big Data organisations need to show moral improvement and strive for moral excellence, in order to gain trust and show a genuine interest in wanting to build a better future together, with society. This would require developing virtuous employees who demonstrate respect for the truth, and have the courage to deal with the challenges presented by technosocial decisions, and the wisdom to know how to apply these virtues to determine the

best decisions to make. Embedding a Virtue ethics approach in Big Data organisations is then, seen from the considerations discussed above, critical to drive the much needed improvement of the current business model.

Before implementing this framework, however, it is important to consider what other existing mechanisms in Big Data organisations would work alongside this framework, or could potentially work against it. This brings the topic of incentives back into the discussion.

3.5 Virtue ethics and incentives in Big Data organisations

According to Murphy (2011), while it is easy for management to talk about ethics, having it affect the remuneration and recognition of employees is a true test of commitment. He argues that organisations communicate what is important to them through their incentives. He refers to Peter Drucker's quote to reinforce this argument: "Changing habits and behaviour requires changing recognitions and rewards. People in organisations, we have known for a century, tend to act in response to being recognised and rewarded—everything else is preaching ... The moment they realise that the organisation rewards for the right behaviour they will accept it" (Murphy, 2011).

The findings of the incentive research discussed in chapter two reveal that well-managed incentives greatly increase performance by an average of 22%, incentives greatly increase individuals' intrinsic interest in work tasks, and overall, incentives have great effects on employee motivation. The research reveals that it is beneficial to use a combination of intrinsic and extrinsic incentives in an incentive system in order to achieve maximum effectiveness. The research findings from this current chapter on ethics reveal that virtuous behaviour is an essential behaviour required for the moral challenges we face, and that implementing an ethics strategy that includes a technomoral framework of virtues will help to promote ethical behaviour in Big Data organisations. Integrating these findings helps to build a system in which virtues and incentives can work together to promote ethical behaviour in Big Data organisations. This can be achieved by adapting incentives that are already in existence in most of these organisations by including ethical behaviour as an important metric for success in incentive scorecards, and KPIs (key performance indicators). Incentives can also be adapted by changing the method of only incentivising goals of productivity and profit, to also incentivise *how* these goals are achieved. Creating ways to incentivise behaviour is growing more popular, and the incentive research demonstrates that this is a successful tool for changing behaviour, therefore it is important to adapt incentives to recognise and reward the ethical behaviours organisations are aiming to achieve to affect real change.

Employees in Big Data organisations currently find themselves in uncertain times with little guidance on how to make the right decisions, and are contributing, often unintentionally, to the current moral state we find ourselves in. Employees are also likely unaware of the moral consequences of the decisions and actions that they take. Employees often work towards certain tasks in order to achieve a prescribed outcome by the organisation, but do not pay attention to how they ethically reach this outcome, or even consider if the outcome is ethical. Applying a moral framework in which specific character traits that are generally intrinsic, but are also promoted and expected by organisations and their leaders, will produce the behaviour that is needed to identify the right thing to do in any situation. By practicing and role-modelling the virtues, these behaviours can become habitual. For those employees who may not have these innate character traits, by the organisation prescribing and rewarding them, the behaviours can be practiced and can become habitual.

Embedding ethics in an organisation's rewards system requires establishing a model to identify ethical behaviour, developing an ethics performance metric, measuring employees against this metric, and then rewarding ethical behaviour, and coaching or punishing unethical behaviour. Based on the incentive research findings from Stolovitch, Clark and Condly (2002) and Moxey (2016), nonfinancial incentives have greater long-term effects, and this is an effective method to use to adjust traditional incentives in order to manage long-term and sustainable ethical behaviour. Integrating an ethics metric into the organisations' promotion process, performance review process, and talent management process will serve to identify and reward ethical behaviour, measured against the ideal behaviours required. Organisational leaders can guide and direct employees through incentives in making decisions that are not only beneficial to them as individuals, but also to the organisation, and to society. Examples of how this can be achieved are explored in the next chapter.

While identifying and recognising virtuous character traits and behaviours in employees in Big Data organisations will serve to promote and reinforce virtuous behaviour, an organisational structure that supports and encourages these virtues is also essential. There are various factors that significantly influence the ethical decision-making environment that should be considered in order to create an ethical setting, in order to implement an effective incentive system. These factors are briefly explored next.

3.5 Organisational factors that influence ethical decision-making

There are specific conditions that should be met in order to effectively and ethically incentivise behaviour. According to Loe, Ferrell and Mansfield (2000), it is essential to understand the

factors that influence ethical behaviour in contemporary organisations in order to influence change. Factors such as an organisation's culture, values and leadership style greatly impact and determine ethical behaviour by creating the setting for promoting ethical behaviour.

3.5.1 Organisational culture

Organisational culture provides the collective norms that guide behaviour in the organisation and can be thought of as 'how we do things around here'. Filabi and Bulgarella (2018) describe culture as a complex and multi-system framework in an organisation that must be aligned to encourage ethical behaviour. An organisations' norms can lead employees to engage in virtuous behaviour, but only if virtuous behaviour is what is demonstrated and role-modelled. Applying Vallor's technomoral framework in Big Data organisations will guide employees in order to flourish in a community setting, such as an organisation, by providing a set of traits that employees need in order to work well together, and with technology (Vallor, 2016). These virtues will have to become part of the collective norms that develop the organisations' culture which guides virtuous behaviour in the organisation. If the organisations' culture includes ethical practices, such as responsible and honest practices in the collection and usage of data, truthful communication, and considering and caring about one another, then this will likely produce good behaviour. Managers in Big Data organisations can support this ethical culture by making it clear what is expected and valued by incentivising the ethical behaviour expected. If the culture includes unethical practices, such as dishonesty, data misuse, manipulation of behaviour, or cutting corners, then going along with those practices appears as correct behaviour to employees, and results in an unethical culture. An example of this unethical culture is demonstrated well in the Netflix documentary, *The Great Hack* (2019). This documentary exposed Cambridge Analytica's unscrupulous business practices that enabled the manipulation of Donald Trump's presidential campaign in 2016. Cambridge Analytica's culture was described as underhanded, dishonest, encouraged bribery and nepotism, and encompassed organisational structures that employees did not understand. The organisation was accused of running a "grossly unethical experiment" by dishonestly harvesting data obtained from millions of Facebook users (Noujaim and Amer, 2019).[15] Due to this scandal, Cambridge Analytica filed for bankruptcy, and Facebook had to make a series of changes to its business tools, but experienced serious reputational damage, and fines (Otlowski, 2020). This scandal highlights the serious consequences to society when organisations create

[15] *The Great Hack* discusses how Cambridge Analytica hired hackers to collect data which it then used against opponents of its political clients. The company worked on Trump's campaign for the 2016 presidency. This documentary is available at: https://www.netflix.com/title/80117542

unethical cultures by only focusing on making money and having power. The collective norms that create these organisational cultures are shaped by the organisation's values, a set of principles that form the foundation of the organisation's beliefs.

3.5.2 Organisational values

Values can be described as those ideals and beliefs that are important to the organisation's survival and success (Lencioni, 2002). Most organisations have a set of values which are beliefs and principles guiding employee behaviour. Core values should be deeply ingrained principles that guide all actions and decisions and not just words on a wall. Employees should be constantly reminded that core values form the basis for every decision the organisation makes (Lencioni, 2002). Although organisational values are essential to achieve the organisation's purpose, they are not ethical standards. Organisations could have values that do not have moral foundations, such as competitiveness. This value could drive a 'win at all costs' attitude. Virtues, however, differ in that they provide moral foundations and inner drives to take the right action, at the right time, for a good moral outcome. Employees in Big Data organisations may aspire to an organisational value such as "dazzle clients", however in order to act virtuously in this regard employees must, for instance, communicate honestly with clients and not do whatever it takes to make clients happy. The behaviour that should be measured for incentives is *how* the employees behaved, and not only the value that inspired the outcome achieved.

Leadership also greatly influences the organisation's culture and values, and poor leadership is a significant threat to the organisational culture and employees' ability to act virtuously. The role of leadership in this context is discussed next.

3.5.3 Leadership

Schein argues that leadership plays a crucial role in organisational culture as leaders' decisions and actions aid in creating, supporting and changing the organisation's culture (Sims and Brinkmann, 2003). Leaders can influence culture by what they pay attention to, how they react to crisis, how they behave as role-models, how they allocate rewards, and how they hire and fire employees (Sims and Brinkmann, 2003). The consequences of these leadership

decisions can positively influence the organisation, or can have extremely damaging effects.[16] Therefore, it is important to recognise and reward leaders' ethical behaviours in order to promote virtuous behaviour in Big Data organisations. It would also be necessary to appropriately punish unethical behaviour to prevent it from reoccurring. Leaders also need to recognise their employees for ethical behaviour in order to embed virtuous behaviour in the organisation. Vallor (2016) argues that moral leadership is sorely lacking in our technosocial environment, and we require magnanimous leaders, those with justified moral ambition, to lead others in decisions that require enduring courage, wisdom, empathy, care, and tolerance. This would influence the culture that is created as these behaviours would become the new norm. In order to encourage moral leaders that demonstrate the courage and wisdom to use and shape technologies for common good, we must pay attention to these behaviours (Vallor, 2016).

It is my view that by including these virtues in incentive systems, this makes it clear what behaviours are expected, and specifically how leaders should conduct themselves. By recognising and rewarding these behaviours, they become the collective norms of the Big Data organisation. And while it may sound counter-intuitive at first glance, my argument in this regard points to the implication of including a metric that can consider the ethical behaviours of employees before they can be promoted, it points in the direction of performance reviews that can also consider ethical decisions and actions and not only performance outcomes to be considered as a good review, and that increases and bonuses must have a combined basis of an ethical as well as a performance metric. This way, measuring ethical behaviour becomes just as important as measuring targets and performance.

3.6 Conclusion

This chapter examined the concept of ethical behaviour, and moral approaches such as Consequentialism (Utilitarianism), Deontology, and Virtue Ethics. Virtue ethics was identified as a well-suited approach for the purposes of this study as it centres on character traits which provide guidance as to how employees should behave, and an ability to identify the right thing to do in any situation. This is essential in the ambiguous, complex and disruptive world of data analytics. Murphy's dimensions of Virtue ethics were explained in order to differentiate this theory from other moral theories. These dimensions revealed that virtues are good habits that

[16] Enron in as a prominent example of the damaging effects of leadership. Communication, Respect, Integrity, Excellence are strong, concise, meaningful values – however these were Enron's values as stated in the company's 2000 annual report. Enron created and publicised these values but did not act on them, making them meaningless (Lencioni, 2002).

are learned by practicing and by observing others practicing good habits. These characteristics are contrasted with vices, as Aristotle advocated that one should strive for balance in life and means of behaviour allow for this balance.

In a call for the return of the practice of Virtue ethics, Vallor's argument that Virtue ethics is a suitable ethical approach for the digital era was discussed. She argues that current decisions about how to live well are not only moral decisions, but they have become technomoral decisions, and these technomoral decisions are resulting in technomoral challenges. Vallor's twelve technomoral virtues were discussed, explaining how these virtues can become habitual behaviour, and how they are necessary in order to address our technosocial concerns. These are the behaviours we need to demonstrate, and therefore the behaviours we need to incentivise in order to create the environment we want to work in, and live in, in our digital era. It was also discussed how these virtues can only flourish if the environment supports these behaviours. An organisation's culture, values and leadership style greatly impact the ethical behaviour in organisations, as organisational culture provides the shared norms that guide behaviour in the organisation, and moral leadership plays a key role in creating and maintaining this culture.

The discussion thus underlines the importance of a Virtue ethics framework in Big Data organisations, in order to promote ethical behaviour. A strong ethical framework is critical to ensure that Big Data analytics are conducted responsibly, and that emerging technologies are managed ethically, and this study's findings reveal that virtuous character traits provide the moral guidance required for both employees, and the Big Data organisation. Embedding a Virtue ethics approach in Big Data organisations will certainly improve the business model by creating a clear framework for how employees are expected to behave in all situations.

Integrating research findings on incentives and virtues demonstrates that the opportunity exists to create a system in which virtues and incentives can work together to promote ethical behaviour in Big Data organisations. This can be done by adapting incentives that are already in existence in most of these organisations by including ethical behaviour as an important criterion for success. Incentives can also be adapted by changing the method of only incentivising goals of productivity and profit, to also incentivise *how* these goals are achieved. Ethical behaviour is then reinforced through recognition and rewards, and coaching or disciplinary action that is taken against unethical behaviour to mitigate it. These incentive mechanisms support the goal of embedding ethics in the Big Data organisation. The benefits and risks of this proposed incentive system, and examples of how this system would achieve the required outcome is explored in the next chapter.

Chapter 4

Towards incentivising ethical behaviour in Big Data organisations

4.1 Introduction

With the goals of improving the current moral state of our infosphere, and finding tools to address the technosocial challenges we face, this study examined research regarding three main concepts, namely: incentives, ethical (virtuous) behaviour, and Big Data organisations. Based on the research findings, it is my argument that implementing a Virtue ethics framework in Big Data organisations will provide the moral guidance required for this context, and an incentive system will reinforce this behaviour, resulting in virtuous employees. It was determined that practicing technomoral virtues such as honesty, courage, and wisdom can create the ethical culture needed for Big Data organisations, and recognising these practices reinforces these virtues to become daily habits. By recognising and rewarding these behaviours, they become the collective norms of the Big Data organisation.

The aim of this chapter is to further this argument by discussing how incentives and a Virtue ethics framework can be integrated successfully in order to promote virtuous behaviour. The discussion includes the benefits and risks of incentivising virtuous behaviour in Big Data organisations, and provides examples of how this integration of incentives and Virtue ethics can be achieved in a manner that promotes its benefits, and minimises its risks. This incentive system would of course require a delicate balancing act from the organisation as it must consider the expectation of employees' virtuous behaviour in proportion to the ethical challenges posed by Big Data, and it must ensure it does not impose a narrow, moralistic, and possibly even discriminatory restriction on employees. The first section explores why we should incentivise virtuous behaviour in Big Data organisations.

4.2 Why incentivise virtuous behaviour in Big Data organisations?

Based on the findings in the previous chapters, it is evident that Big Data organisations must make changes to the tools used to promote ethical behaviour of its employees, and it was suggested that applying a technomoral framework would be a suitable tool for this purpose. The implementation of this framework will require technomoral education and practice, and even more importantly – self-reflection (Vallor, 2016). In *The Apology of Socrates* by Plato (399 BC), Greek philosopher Socrates asserted that "the unexamined life is not worth living

for human beings" (Vallor, 2016). This can be interpreted to mean that without examining what one actually wants out of life, then life is not worth living. We should ask ourselves what makes us who we are, what excites us, and what challenges us. This virtuous exercise results in self-awareness regarding our strengths and limitations, and how our behaviour impacts others, and the world around us. If employees are more aware of some of the harmful outcomes created by Big Data analytics, and are more aware of the outcomes of their own decisions and actions in this context, they should be more motivated to act virtuously to change the moral direction in which we are headed. Employees, equipped with a technomoral framework, can thus strive for excellence by continuously developing these technomoral virtues to improve the state of our infosphere. Vallor (2016) stresses that it is essential for human agency that our moral practices remain our own conscious choices. The depth of the threats to human flourishing we are facing are not understood by many, and even those who do understand, may not realise that the solution must be an ethical one (Vallor, 2016). The misuse of data analytics, for instance, has led to the manipulation of our attention in order to influence our behaviour, it has contributed to the spread of misinformation, and it is affecting how we interact with the world round us.

It is for these reasons that Big Data organisations need to care about the impact they have on society and what legacy they want to leave. They can achieve this by becoming virtuous organisations. This can be done by embedding a technomoral framework of virtuous character traits that provide the moral guidance required, and making it explicit how employees are expected to behave. Then, by adapting existing incentives to include ethical behaviour as an important criterion for success, ethical behaviour is reinforced through recognition and rewards. Incentivising virtuous behaviour thus becomes the mechanism needed in Big Data organisations to motivate employees to make good decisions, for the right reasons, in complex and uncertain situations. The benefits of such an incentive system are explored next.

4.3 Benefits of incentivising ethical behaviour in Big Data organisations

Big Data organisations must ensure that the tone from the top signals the virtuous behaviours required from its employees. Virtuous employees make better informed ethical decisions that support the organisations long-term sustainability, and they tend to avoid decisions that could result in unethical behaviour and financial loss. Incentives are a good way for leadership to send a strong signal to its employees that virtuous behaviour is essential to its success by undertaking the following activities (Petry, 2019; Martin, 2015):

(1) The creation of an ethics incentive system will, at the very least, result in discussions about ethics and behaviour, which will increase ethics awareness, and promote virtuous behaviour in daily practices in Big Data organisations.
(2) Recognising that employees are demonstrating virtuous character traits will reinforce these behaviours, encourage repetition of these behaviours, and result in imitation of these behaviours by other employees, resulting in virtuous behaviours becoming common practice in Big Data organisations.
(3) Paying attention to ethical behaviour consistently, and rewarding virtuous behaviour, signals that it is expected and valued by the organisation, and therefore helps to set clear expectations for employees in Big Data organisations.
(4) Recognising ethical leadership signals that the organisation's executives are committed to the ethics strategy and expect virtuous behaviour from all leaders, thereby building a virtuous Big Data organisation that exemplifies ethical leadership.
(5) Measuring ethical behaviour in performance reviews, promotion processes, and increase reviews sets clear expectations of what behaviour is required to be considered for these activities, and therefore aims to encourage the right behaviour. This is also supported by research findings from Stolovitch, Clark and Condly (2002), and Moxey (2016), revealing that nonfinancial incentives such as recognition and appreciation are more effective and elicit long-term changed behaviour. Promoting virtuous leaders who possess and practice traits such as honesty, courage, and empathy, and have the ability to apply practical wisdom, signals these are the required behaviours in the Big Data organisation and these leaders become good role-models for employees.
(6) The organisation's reputation and status as an 'employer of choice' is impacted by the demonstrated ethical behaviour and this is one of the core reasons an employee chooses to join an organisation, therefore it is essential to continually reinforce and reward virtuous behaviour to create a strong employee value proposition for Big Data organisations.
(7) Embedding a technomoral framework builds the foundation for an ethical culture, and this is necessary in order to incentivise ethical behaviour. This framework helps to identify the ideal ethical targets, resulting in clear ethics metrics, which can then be monitored.
(8) When implementing the ideas above, an ethical culture will emerge and ethical behaviour becomes embedded in the organisation. By ensuring that the Big Data organisation identifies virtuous employees for leadership opportunities, this sends a clear message that unethical employees need to develop ethical behaviours in order to become future leaders. Creating a system that identifies specific ethical behaviours also helps to enforce reasonable consequences for unethical behaviour (coaching or punishment). By actively demonstrating that unethical behaviour will not be tolerated, and by following this through with action, sends a clear message. If employees and clients, for instance, observe severe

consequences for data abuse, they will trust the organisation more. Unethical behaviour may delegitimise an organisation, therefore an incentive to limit this behaviour supports legitimising the organisation which is critical for Big Data organisations to build trust.

(9) Ethical behaviour also filters to supply chain networks as organisations have an interest in ensuring others in the chain also demonstrate ethical behaviour otherwise their reputation would be at risk. Rewarding virtuous organisations with legitimate business opportunities creates further reach in driving ethical behaviour across society.

(10) There are numerous benefits of using data responsibly to advance social factors, such as facial recognition in the use of finding missing children, or to locate criminals. Incentivising responsible data usage and collection can assist society, and punishing the behaviour when it is used irresponsibly can deter the behaviour.

These benefits reveal that incentives can be an integral tool in an organisation's ethics management strategy, and that these factors can serve as a basis to develop criteria for good management practices. As such, a system of incentives will go a long way to send a strong signal that ethics is essential to an organisation's success. When designing an ethics management strategy, however, the potential risks of incentivising ethical behaviour must also be considered in order to mitigate these risks, where possible. These potential risks are considered next.

4.4 Risks of incentivising ethical behaviour in Big Data organisations

The design, implementation, and management of an incentive system will influence the ethical behaviour that is being incentivised, therefore it is important to consider all the potential risks associated with incentivising ethical behaviour. When implementing an ethical measurement, an organisation can fall into the trap of promoting a moralistic framework, or a model that becomes discriminatory and unjust. When ethical behaviour becomes a measure for success, an employee who demonstrates unethical behaviour can be excluded from organisational opportunities such as rewards, promotions, and increase reviews. Measuring ethical behaviour is sometimes viewed as too subjective, and when measuring ethical behaviour tied to activities such as promotions, performance reviews, or for incentive purposes, this subjectivity can be seen as inconsistent and unfair. An incentive system with inconsistent effects can be seen to be discriminatory if it is not based on objective and reasonable criteria (Altman, 2020). This can become a key risk and must be considered when designing and implementing ethical measures that are tied to incentives.

To mitigate this risk, it is critical for ethics measures to be reasonable, objective, and to be applied consistently. When implementing Vallor's technomoral framework, which has specific descriptors, these measures must be included in clear and defined methods in order to evaluate employees fairly and consistently. The organisation needs to be aware of the potential risk that these measures can be perceived as a form of organisational discrimination. Employment decisions based on race, sex, religion, and other social categories are considered wrong, as decisions should be based on who is best qualified for the role (Altman, 2020). Employment decisions regarding who is best suited for a new job or promotion are already highly contestable, because the criteria determining these decisions are often vague and do not always come with clear weightings (Altman, 2020). Any decision that infers that employees with "different or inferior" morals cannot be considered for new jobs or promotions can become problematic.

The most fundamental principle of justice, widely accepted since it was first defined by Aristotle, is the principle that "equals should be treated equally and unequals unequally" (Velasquez et al. 2014: para. 6). This principle is sometimes expressed as "individuals should be treated the same, unless they differ in ways that are relevant to the situation in which they are involved" (Velasquez et al. 2014: para. 6). This statement explains why it is possible to differentiate between employees, however it should not be used as a justification for making prejudicial decisions. There are many differences that are used as justifiable criteria for treating employees differently. It is considered to be fair when employees who make more effort, or who make a bigger contribution to projects, receive more benefits, and measuring ethical behaviour can be seen in this same light. As long as employees are aware of the organisation's requirements, and are given a fair opportunity to demonstrate the required behaviours, such as the technomoral virtues, then it would be considered fair to use ethical behaviour as a requirement for employment decisions, such as promotions. The organisation must make it clear that it expects these character traits to be displayed, and provide training and coaching to help achieve this aim (Altman, 2020). Thus, when measuring ethical behaviour, along with performance, as criteria for success, it is not considered unfair practice.

Other potential risks regarding incentivising ethical behaviour in Big Data organisations include the factors listed below (Petry, 2019; Moxey, 2016). Ways to mitigate these risks are considered at the end of this list.

(1) Not all ethical acts are noticed or recognised and this inconsistency can cause resentment. Employees who practice virtuous behaviour but go unrecognised may eventually become demotivated if they observe other employees being recognised or rewarded for similar behaviour.

(2) Incentivising ethical behaviour could create a disincentive to raise problems. Employees may be unwilling to raise concerns if doing so could damage their record, reward, or potential promotion by speaking up. This is a great concern in Big Data organisations as if an employee uncovers data misuse, or any other ethical problem for that matter, and is unwilling to report it due to the impact it could have on them financially or on their career, serious data breaches will go unreported.

(3) Different conversations are held in performance reviews by different managers, therefore it is hard to ensure consistency of recognition of ethical employees, and coaching for unethical employees. This inconsistency could be seen as unfair, and if the performance review is linked to incentives or promotion, could become demotivating for employees who experience this inconsistency.

(4) Some individuals believe that it is wrong to pay people to behave ethically, and believe that if employees need to be paid to be ethical, then they are not actually being ethical. They believe this may send the wrong message that acting ethically is an extra task and that it is acceptable to act unethically, but just won't receive a reward.

(5) Financial incentives can appear to suggest that the organisation is putting a price on ethics, and employees may even find it insulting, believing that the organisation is implying it cannot trust them to make ethical decisions independently.

(6) Many managers struggle to rate employees on subjective values-based criteria such as 'rate employee based on how they act according to values', as it is difficult to measure and to apply in a meaningful way, resulting in inconsistencies.

(7) Due to potential subjectivity, unethical acts can go unnoticed and unethical employees can give the impression of being ethical, when they are not.

(8) The probability of ignoring cross-cultural values is higher when an organisation goes global which can create further inconsistencies across locations, creating even larger scale risks regarding consistent ethical behaviour and measurement of this.

(9) Incentives can create pressure to cut corners and aggressively pursue goals. Whenever a target is quantified, there is an incentive to manipulate the process to achieve the desired outcome. This applies to incentives tied to promotions, reviews, and increases as well. Employees may find ways to manipulate the ethics measurement to appear as 'ethical' in order to achieve the promotion or increase.

(10) From a legal point of view, there are concerns that a negative performance review can be used against the organisation in litigation at a later stage. If an employee in a position of authority receives a negative ethics performance review due to unethical behaviour and is subsequently involved in additional wrongdoing, the organisation may need to prove that it addressed the initial negative performance review adequately in order to avoid further unethical behaviour.

These risks can be managed and mitigated by implementing a robust technomoral framework that describes ideal specific behaviours required, which actual behaviours can be measured against, and this will result in less opportunities for inconsistencies and subjectivity. This framework specifies how to act virtuously through a set of behavioural, cognitive, perceptual, and affective habits that the employee is required to develop in the workplace, and in interaction with society (Vallor, 2016). Training must thus be provided to all employees to explain the behaviours required, with practical examples and opportunities to practice. Training must also be provided to managers on how to identify these behaviours in employees, and how to coach these behaviours. Manipulation can be mitigated by designing, implementing and managing a fair and vigorous incentive system. This can be achieved by ensuring the incentive approach is aligned with the organisation's culture and values, setting achievable targets which do not encourage unethical behaviour in order to achieve them, setting ethical targets for rewards to determine outcomes and differentiate them from the means used to achieve the outcomes, and making sure that employees are not rewarded if they have breached the organisations values (Moxey, 2016). It is also necessary to identify unethical behaviour, address it, and monitor it to ensure it is prevented, and where this is not possible, disciplinary action should be taken. Beginning the process with transformative procedures such as coaching and discussions would give the employee an opportunity to be coached regarding unethical behaviour, and the employee would be given an opportunity to reform, depending on the severity of the incident. It is important to maintain the standard safe reporting mechanisms required in all organisations in order to keep anonymous reporters safe. Employees must have the option available to report unethical behaviour, without the fear of retaliation and an impact to their incentives.

Although incentivising ethical behaviour may include inconsistencies and subjectivity, it is evident that there are real benefits to incentivising ethical behaviour. These benefits outweigh the risks as incentivising ethical behaviour will result in virtuous employees who have good ethical judgement, and know how to apply technomoral virtues in the complex digital era. Creating awareness of the potential risks will assist organisations with designing appropriate incentives and processes, taking these risks into consideration from the start of designing an incentive system, thus mitigating these risks and preventing unfair restrictions on employees. A technomoral framework ensures that there is a solid foundation underlying the ethical culture of the organisation, with specific behaviour descriptors that are made known to all employees. Examples of how to incentivise ethical behaviour are explored next.

4.5 How to incentivise ethical behaviour in Big Data organisations

Existing incentives in Big Data organisations can be adjusted to include promotion of virtuous behaviour effectively and should also be integrated into the organisation's ethics management strategy. Examples of this practice could include the following (Epley and Kumar, 2019; Petry, 2019; Moxey, 2016):

(1) Recruitment: Promoting ethical behaviour should start at the beginning of the employee lifecycle. This should begin with hiring virtuous employees. Interviews are opportunities for identifying the best candidates and this is where it is critical to assess character traits. Interview questions can be designed to include assessing potential employees' ability to recognise and apply the technomoral virtues. Suitable candidates are then rewarded with job opportunities in the organisation. These specific virtues, and the behaviours they embody, must be consistent with all of the organisation's people practices, and must be fully integrated with these practices, such as recruitment, selection, training, performance management and reward practices.

(2) Training: Give recognition or rewards to employees who excel in ethics training. Ethics awareness and decision-making training should be conducted for all employees. This training should also be conducted for managers, and should include how to recognise employee commitment to ethics with examples that illustrate how employees manage ethical dilemmas and how to provide feedback to recognise employees for demonstrating virtuous behaviour. Such training of managers should be designed to reduce possible inconsistency or subjectivity in the administration of the incentivisation of virtuous behaviour.

(3) Bonuses: Organisations can reward ethical behaviour directly through key performance indicators (KPIs) that translate the technomoral virtues into measurable actions and then link a percentage of bonuses to these actions. Demonstrated examples of honesty, courage, and wisdom can be rewarded here. Defining clear key performance indicators reduces the risk of subjectivity, inconsistency and unfairness. This would need to be monitored closely by senior executives and risk management teams to avoid fraudulent behaviour.

(4) Performance Reviews: Introduce ethics measures into performance review discussions allowing opportunities for recognition of virtuous behaviour displayed and/or coaching of unethical behaviour displayed. Introducing specific measures will create objectivity and consistency. Virtuous acts such as responsible data management, promoting privacy of data, and treating clients fairly can also be recognised here.

(5) Promotions: Introduce ethical behaviour as one of the requirements for a promotion. Keeping the important provisos in this regard mentioned above in mind, employees should

not be promoted if they display unethical behaviour and cannot be seen as role-models for other employees. Senior leaders will require training on how to rate the virtuous behaviour of employees in order to reduce the risk of subjectivity and inconsistency, and they must ensure unfair restrictions are not imposed on employees.

(6) Awards programme: Give ad-hoc awards on the spot for good ethical practice to recognise special contributions with immediate benefits. An organisation-wide ethics award programme could be created, including a peer and supervisor nomination system, that recognises employees for virtuous behaviour.

(7) Prizes: Give recognition prizes for employees who show courage by speaking up in difficult circumstances. Rewarding courageous behaviour immediately can reinforce the behaviour to ensure it is repeated.

(8) CEO acknowledgment: Send letters from the CEO or senior executives to employees who demonstrate virtuous behaviour acknowledging their contribution to the organisation's ethical culture.

(9) Sanctions: Incentive systems must include punishments or sanctions for unethical behaviour. The sanction should be appropriate to deter unethical behaviour, and not be seen as something accepted as the cost of doing business. Making an example of someone who has behaved unethically can act as a powerful deterrent for other employees, and not taking action against an unethical employee sends a message that it is acceptable to behave unethically.

(10) Project delivery: Incentives can also be applied on a project level. For example, data management projects can be assessed based on evidence of virtuous behaviours in *how* the project is managed and *how* the data principles are applied. According to research from Stolovitch, Clark and Condly (2002), incentivised teams increase their performance by 45%, due to the monitoring that takes place in teams thus revealing that peer pressure has significant influence, therefore they are more likely to consider the ethical risks if the incentive includes criteria for this as the team members will then hold each other accountable.

These forms of incentives can be used to promote virtuous behaviour effectively and must be integrated into an ethics management strategy in order to embed ethical behaviour in the organisation. This can be illustrated with an example from Novartis. In 2016, the pharmaceutical giant was required to pay settlements in several areas relating to unethical conduct of its employees (Snoyman, 2019). Based on this, they adjusted their incentive system accordingly. Instead of calculating annual bonuses based on profits and sales only, Novartis now includes an ethical behaviour component in its incentive model. An employee will receive a score of 1, 2 or 3 in respect of their ethical conduct, with a 2 revealing that they

had met expectations and a 3 revealing that they had exceeded expectations. Those receiving a 2 or a 3 would receive their annual bonuses (as much as 35% of their annual salary), however those receiving a 1 will not receive a bonus, and could face possible disciplinary action once due process has been followed (Snoyman, 2019). This has created an organisational culture where employees are actively and consciously thinking about their behaviour and how ethical or unethical it may be. Managers need to assess their own ethical behaviour, and the ethical behaviour of the employees reporting to them. This places a responsibility on management to actively manage ethical behaviour (Snoyman, 2019). This example demonstrates how incentives could be used effectively to promote ethical behaviour and how to integrate incentives into an ethics management strategy in order to embed ethical behaviour in the organisation.

This type of incentive system can be further enhanced in Big Data organisations by including a technomoral framework, making explicit which technomoral virtues and which character traits are expected to be developed and practiced in the organisation. Implementing clear behaviour descriptors, and promoting specific actions that are required to manage organisations in the complex digital era, will ensure there is less risk of subjectivity, inconsistency and unfairness. The rating scale used in the above example can be enhanced by linking each rating to specific virtuous behaviours. For example:

A “2” signals “met expectations” and this rating can be made more specific, by describing:

“Demonstrates at least 6 of the following behaviours: respect for the truth, ability to judge potential dangers and opportunities, seeks fair and equal opportunities and risks, concern for other employees well-being, respects others who hold different views, flexibility to change belief or emotion according to the situation, moral leadership, self-control, humility by avoiding extreme optimism and pessimism, caring and emotionally responsive to others’ needs, moral perspective, and overall applies good ethical judgement with practical wisdom.”

A “3” signals “exceeds expectations”, and could be more specific by describing “Demonstrates all of the following behaviours.”

And a “1” signals “did not meet expectations”, and could be described as “Demonstrates less than 6 of the following behaviours.”

This incentive scorecard should include a chart with examples of the behaviours required for each technomoral virtue to assist managers in rating employees consistently, for example:

- Respect for the truth: Demonstrates sincerity, openness, admits when they are wrong.
- Concern for other employees' well-being: Demonstrates empathy, listens to others, shows kindness.
- Respects others who hold different views: Demonstrates good listening skills, pays attention and does not interrupt while others are speaking, shows an openness to learn.

Another version could be a rating scale that includes demonstrating all twelve technomoral virtues, however describes specific behaviours required for each virtue at varying levels of intensity. This technomoral incentive scorecard could be adjusted according to each organisation's requirements. Further work can be done to refine exactly how this technomoral framework can be implemented.

4.6 Conclusion

This chapter examined the integration of incentives and Virtue ethics in Big Data organisations as a means to promote virtuous behaviour. It was determined that virtuous behaviour is important for human flourishing in the digital era. This study reveals that the misuse of data analytics has led to the manipulation of our attention in order to influence our behaviour, it has contributed to the spread of misinformation, and it is affecting human agency. It is essential for human agency that our moral practices remain our own conscious activity (Vallor, 2016). Incentivising virtuous behaviour becomes the mechanism urgently needed to motivate employees to make conscious decisions, for the right reasons, in complex and uncertain situations. This incentive system will help navigate employees through these challenges, and promote the ethical behaviour required in Big Data organisations, and in society in general.

The discussion included the benefits and risks of incentivising virtuous behaviour in Big Data organisations. It was demonstrated that incentives are a good way to send a strong signal that ethics is important to an organisations' success by acknowledging employees who demonstrate virtuous behaviour, which will reinforce these behaviours, encourage repetition and imitation of these behaviours, and which will create a strong ethical culture in the organisation. Making ethical behaviour a requirement for performance reviews, promotions, and increases sets clear expectations of what behaviour is required to be considered for career progression, and reinforces the behaviour. The creation of an ethics incentive system

will result in regular discussions about ethics, which will increase ethics awareness among employees, and promote ethical behaviour in daily practices, reinforcing the right behaviour. Embedding a technomoral framework builds the foundation for an ethical culture, and helps to identify the ideal ethical targets, resulting in clear ethics metrics, which can then be managed and monitored.

The potential risks of incentivising ethical behaviour include inconsistency, subjectivity and unfairness. A key risk identified is that incentivising ethical behaviour can result in potential organisational discrimination. A decision that suggests that employees with “different or inferior” morals cannot be considered for new jobs or promotions can be concerning. According to the principle of justice, although employees should be treated the same, if they differ in ways that are relevant to the situation they can be treated differently. It is considered fair when employees who make more effort receive more benefits, and this applies to ethical behaviour too. As long as employees are aware of the organisation’s requirements and are given a fair opportunity to demonstrate the required behaviours, then it would be considered fair to use ethical behaviour as a requirement for employment decisions. These risks can be mitigated by implementing a robust technomoral framework that describes ideal specific behaviours, against which actual behaviours can be measured. I argued that this will result in less opportunities for inconsistencies, subjectivity and manipulation.

It was also highlighted that it is important to ensure there are consequences for unethical behaviour as this acts as a potential deterrent for further unethical behaviour. Another key risk discussed is that employees may be unwilling to raise concerns if doing so might damage their reward or potential opportunity for promotion. It is therefore essential to maintain the standard safe reporting mechanisms required in all organisations in order to keep anonymous reporters safe. Employees must have the option available to report unethical behaviour, without the fear of retaliation and an impact to their incentives.

Examples of types of incentives that could be used to promote ethical behaviour effectively were suggested and it was recommended that these should be integrated into an ethics management strategy. These include activities such as rewarding ethical behaviour through KPIs that translate virtues into measurable actions and linking bonuses to these actions. Another suggestion is introducing ethics measures into performance reviews to allow for opportunities for recognition of ethical behaviour displayed, or coaching for unethical behaviour displayed. Introducing ethical behaviour as one of the requirements for a promotion is key, to ensure there is ethical leadership in the organisation.

In summary then: It was determined that implementing a Virtue ethics framework in Big Data organisations will provide the moral guidance required for our damaged infosphere, and that

an incentive system will reinforce this behaviour, resulting in virtuous employees. Practicing technomoral virtues such as honesty, courage, and wisdom can create the ethical culture needed for Big Data organisations, and recognising these practices reinforces these daily habits. By recognising and rewarding these behaviours, they become the collective norms of the Big Data organisation.

The final chapter explores why this research topic is significant, and provides a summary of this study's findings. Factors which should be considered when designing incentives to embed ethical behaviour in Big Data organisations are highlighted, and suggestions are provided for future work on this topic.

Chapter 5

Conclusion of study

The aim of this study was to determine if incentivising ethical behaviour could improve ethical decision-making skills in Big Data organisations. This research topic is significant as we are currently facing an alarming new era of potential ethical scandals, that of the wide-spread abuse of data analytics, which has severe consequences for our moral future. With threats of violating privacy rights, and the growing awareness around manipulation of people's attention, and the abundance of misinformation available, all resulting from the use of new technologies and data mining, there is a critical need for better governance, transparency and accountability. This state of affairs uncovers that we require a strong moral framework that can provide the moral attention and care that this dire situation deserves.

It is suggested in this study that Big Data organisations need to consider new strategies for this new ethical landscape, in order to create ethical organisations that can positively contribute to society using data analytics wisely, instead of negatively contributing to the moral state we find ourselves in. It is suggested that integrating incentives and virtues will promote the ethical behaviour required to improve the way these Big Data organisations operate. There is little literature available regarding incentivising ethical behaviour in Big Data organisations, therefore this study aims to contribute to this important conversation. The value of exploring methods to reward ethical behaviour is essential in the fight against data misuse.

It is essential for Big Data organisations to invest proactively in implementing systems that support and promote ethical behaviour of its employees. This study reveals that we need to implement a technomoral virtue framework, which is a framework that will help us navigate through the complex moral decisions we are required to make with emerging technologies that are currently supporting our lives. By promoting and rewarding specific virtuous behaviours, ethical decision-making skills in Big Data organisations can be elevated. The findings that led to this conclusion are summarised below.

5.1 Summary of findings

This study commenced with an exploration of organisational incentives, identifying the opportunities and complexities of implementing incentives in organisations. Through this exploration, it was determined that a combination of intrinsic and extrinsic incentives, as well

as financial and nonfinancial incentives, should be used in an incentive system with the aim of achieving maximum effectiveness to encourage required behaviours in an organisation. Research findings from Stolovitch, Clark and Condly (2002), and Moxey (2016), reveal that in the context of changing behaviour versus improving performance, nonfinancial incentives such as recognition and appreciation are more effective and elicit long-term changed behaviour, which is suitable for influencing ethical behaviour. The research reveals that incentives do positively affect behaviour, and incentive systems must be designed, implemented and managed well to ensure that provisions are made for any potential risks and unintended consequences. Research also reveals that incentives are still attractive to employers as they help to build new habits, and help to break bad habits.

This study reveals that the misuse of data analytics has led to the manipulation of our attention in order to influence our behaviour subconsciously for ulterior business motives, it has contributed to the spread of misinformation and “fake news”, it has led to the violation of our right to privacy, and it is affecting our freedom of autonomy. For these reasons, it is clear that Big Data organisations must implement a moral framework as part of their business models to promote ethical behaviour in order to confront these new challenges. It is recommended that an ethics of character will work better in Big Data organisations than a rule or duty ethics which needs to be constantly enforced and policed. Virtue ethics is a well-suited approach as it focuses on the character traits of the employee and provides guidance as to how employees ought to behave. Vallor’s book *Technology and the Virtues* (2016) provides an insightful evaluation of the role that Virtue ethics can play in the digital world. Vallor argues that in order to live well we must live our virtues, and make good decisions through selfless actions, and not allow self-interest to define our character (Vallor, 2016). This can be achieved by implementing a technomoral framework, a framework that describes specific virtuous behaviours which help employees to navigate the challenging ethical landscape they face. Big Data organisations must make every effort to develop employees who demonstrate these virtues, for example, honesty, courage, empathy, and an ability to apply practical wisdom. The necessity for this practice has become critical for human flourishing in the digital era.

The integration of incentives and the virtues involves including an ethics metric in existing organisational incentives in order to measure how employees behave in the organisation. By embedding a technomoral framework in Big Data organisations, this assists to identify the ideal ethical behaviours required, which will result in clear ethics measures, which can then be managed and monitored. Incentives are a good way to send a strong signal that ethics is important to an organisation’s success by acknowledging employees who demonstrate virtuous behaviour. Making ethical behaviour a requirement for performance reviews, promotions, and increase reviews sets clear expectations of what behaviour is required to be

considered for career progression, and reinforces the behaviour. The creation of an ethics incentive system will increase ethics awareness, and promote ethical behaviour in daily practices which will reinforce the behaviour.

There are many benefits to implementing incentives to promote virtuous behaviour, however there are also potential risks. These risks arise due to potential inconsistencies, subjectivity or unfairness. A key risk identified is that incentivising ethical behaviour can result in potential organisational discrimination, by potentially excluding employees from promotional opportunities due to their moral behaviour. In order to manage this risk, all employees must be aware of the organisation's requirements and must be given a fair opportunity to demonstrate the required behaviours, such as the technomoral virtues. This would ensure that it would be considered fair to use ethical behaviour as a requirement for employment decisions, as it is a requirement for the fundamental running of the organisation. Another key risk identified is that employees may be unwilling to raise concerns if doing so might damage their reward or potential opportunity for promotion. This risk can be mitigated by designing, implementing and managing a rigorous and transparent ethical incentive system. It is also important to maintain the standard safe reporting mechanisms required in all organisations in order to keep anonymous reporters safe. Employees must have the option available to report unethical behaviour, without the fear of retaliation and an impact to their incentives. It is also important to ensure there are consequences for unethical behaviour. It is necessary to identify unethical behaviour, address it, and monitor it to ensure it is prevented, and where this is not possible, disciplinary action should be taken. Employees do know right from wrong, but the circumstances they find themselves in often affects the decision to act responsibly, and therefore encouragement in the right direction results in a better course of action. By rewarding ethical behaviour, and appropriately disciplining unethical behaviour, the organisation emphasises which behaviours are expected, and which behaviours are undesirable.

Examples of types of incentives that could be used to drive ethical behaviour effectively were suggested and it was recommended that these should be integrated into an ethics management strategy. These include activities such as rewarding ethical behaviour through KPIs that translate virtues into measurable actions and linking a percentage of bonuses to these actions. Another suggestion is introducing ethics and values measures into performance review discussions to allow for opportunities for recognition of ethical behaviour displayed or coaching for unethical behaviour displayed. Introducing ethical behaviour as one of the key requirements for promotion is essential as moral leadership is needed more than it ever has before in these uncertain times.

Based on the research conducted, this study reveals that implementing a Virtue ethics framework in Big Data organisations will provide the moral guidance required for our damaged infosphere, and an incentive system will reinforce this behaviour, resulting in virtuous employees. Big Data organisations must encourage employees to practice the technomoral virtues such as honesty, courage, and wisdom, in order to create the ethical culture needed in these organisations. Leaders in these organisations must recognise these practices in order to reinforce these daily habits, in order to promote virtuous behaviour across the organisation.

5.2 Recommendations

When designing incentives to embed ethical behaviour in Big Data organisations, the following factors should be considered (Moxey, 2016):

(1) Listen to employees' ideas and create opportunities for them to give input as this will create buy-in to the incentive system.
(2) Ensure the incentive approach is aligned to the organisation's values and culture. To promote virtuous behaviour, this must be demonstrated in the organisation's culture.
(3) Establish targets that are achievable without needing to resort to illegal or unethical conduct.
(4) Include communication and training for employees in each stage of the design and implementation stages, to ensure effective change management.
(5) Implement independent monitoring and evaluation measures in the incentive system.
(6) Record ethics breaches in order to identify trends to implement solutions**.**

5.3 Future Research

Further research should include an evaluation of the role of incentives for ethical behaviour in terms of how they function as motivating factors in different generations. The workforce of this era is different to previous generations, such as millennials, and now Generation Z. It is likely that they respond to different incentives and might not have been included adequately in the research conducted over the last few decades. They have grown up using digital media from an early age and are motivated by attention and acceptance from social media platforms, something that older generation employees may not be that prone to. Millennials grew up believing in the power of their own choices and mistrusting people in power. They expect more from brands, with ethics and morality becoming part of their identity and culture. Effective incentive programmes for millennials appear to centre on improving work-life balance, allowing

flexibility, offering suitable promotions and opportunities to give back to the community. Millennials thrive on recognition and support, and want to see their efforts appreciated in a timely manner (Bannon, Ford and Meltzer, 2011). These factors need to be explored further in order to identify how to influence this generation's ethical behaviour and decision-making capabilities in order to respond appropriately to the debate regarding Big Data ethics.

Further research is also required on the details of designing, implementing, monitoring and adapting an incentive system to reward, and thus promote technomoral virtues in the employees of Big Data organisations. In this study a case was made for such an incentive system, and specifically for the development and exercising of technomoral virtues, leaving it to others to weigh and critique this proposal, and if it is found to be sound, to refine it and work towards implementation in some form or another. This incentive framework could be adjusted and implemented according to each organisation's requirements, by defining and embedding specific behaviours based on specific organisational traits. Further work can be done to refine exactly how this technomoral framework can be implemented.

5.4 Final thoughts

Creating a system founded on two important factors – the need for purpose and meaning while striving for excellence and achieving our desires; and the need to be remunerated fairly for our efforts to enable us to live well with technology – could be extremely powerful in combination with one another, not only in the context of life in general, but also in the context of Big Data organisations. It is also incredibly necessary – we must find effective ways to address our severely damaged infosphere, and change the moral direction in which we are headed.

"A long-overdue commitment to the cultivation of technomoral habits and virtues may be the human family's only real chance for not merely continuing to live, but live well in this century and those to come. If we act now, while there is still time and hope, we may at last discover what kind of human, or posthuman, future is worth wishing for."

Shannon Vallor (2016: 291)

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